```
=> fil reg ; d que 13
FILE PREGISTRY ENTERED AT 08:54:17 ON 06 JUL 2001
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2001 American Chemical Society (ACS)
STRUCTURE FILE UPDATES:
                            5 JUL 2001 HIGHEST RN 344737-88-8
DICTIONARY FILE UPDATES:
                            5 JUL 2001 HIGHEST RN 344737-88-8
TSCA INFORMATION NOW CURRENT THROUGH January 11, 2001
  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.
Structure search limits have been increased. See HELP SLIMIT
for details.
L3 ...
             31 SEA FILE=REGISTRY ABB=ON ^.{0-6}HK[ALIVPFWMSTYNQCG]K.{0-6}^/SO
                SP
=> d rn cn sql kwic nte 13 1-31; fil capl; d que nos 14
     ANSWER 1 OF 31 REGISTRY COPYRIGHT 2001 ACS
     344422-23-7 REGISTRY - use Registry # to match sequence to witation
RN
CN
     L-Lysine, L-histidyl-L-lysyl-L-seryl-L-lysyl- (9CI) (CA INDEX NAME)
ŠQL
         1 HKSKK
SEQ
           =====
                                 0-12
HITS AT:
           1-5
                                 0,1
L3
     ANSWER 2 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     338970-56-2 REGISTRY
CN
     L-Lysine, glycyl-L-histidyl-L-lysyl-L-alanyl-L-lysylglycyl-L-prolyl-L-
     arginyl- (9CI) (CA INDEX NAME)
SQL
     9
SEQ
         1 GHKAKGPRK
HITS AT:
           1-9
L3
     ANSWER 3 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     338970-52-8 REGISTRY
CN
     Glycine, glycyl-L-histidyl-L-lysyl-L-valyl-L-lysyl-L-arginyl-L-prolyl-L-
     lysyl- (9CI) (CA INDEX NAME)
SQL
         1 GHKVKRPKG
SEQ
           ========
HITS AT:
           1-9
L3
     ANSWER 4 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     334993-69-0 REGISTRY
     L-Lysine, L-.alpha.-glutamyl-L-histidyl-L-lysyl-L-valyl-L-lysyl-L-
CN
     isoleucylglycyl-L-valyl-L-.alpha.-glutamyl-L-glutaminyl- (9CI) (CA INDEX
     NAME)
SQL
     11
SEQ
         1 EHKVKIGVEQ K
```

```
HITS AT:
        1-11
   ANSWER 5 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
   316821-90-6 REGISTRY
   L-Lysine, L-lysyl-L-histidyl-L-lysyl-L-histidyl-L-lysyl-L-histidyl-L-
CN
    lysylglycyl-L-lysyl-L-histidyl-L-lysyl-L-histidyl-L-lysyl-L-histidyl-
    (9CI) (CA INDEX NAME)
   15
SQL
SEQ
       1 КНКНКНКСКН КНКНК
        HITS AT:
        1-15
   ANSWER 6 OF 31 REGISTRY COPYRIGHT 2001 ACS
Т.3
   290374-35-5 REGISTRY
RN
CN
   L-Lysine, N2-acetyl-L-lysyl-L-threonyl-L-.alpha.-glutamyl-L-seryl-L-
   histidyl-L-lysyl-L-alanyl-L-lysylglycyl- (9CI) (CA INDEX NAME)
SQL
   10
       1 KTESHKAKGK
SEQ
        ========
HITS AT:
        1-10
NTE modified
______
            ----- location ----- description
terminal mod. Lys-1 - N-acetyl
______
   ANSWER 7 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
   282712-87-2 REGISTRY
CN
   L-Histidinamide, L-alanyl-L-lysyl-L-arginyl-L-histidyl-L-histidyl-L-lysyl-
   L-tyrosyl-L-lysyl-L-arginyl-L-lysyl-L-phenylalanyl- (9CI) (CA INDEX NAME)
OTHER NAMES:
   22: PN: WO0040965 PAGE: 11 claimed protein
CN
SQL
SEQ
       1 AKRHHKYKRK FH
        -------
        1-12
HITS AT:
NTE modified
----- location ----- description
______
terminal mod. His-12 -
                                 C-terminal amide
   ANSWER 8 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
   278169-06-5 REGISTRY
RN
CN
   L-Serine, L-arginyl-L-histidyl-L-lysyl-L-glutaminyl-L-lysyl-L-isoleucyl-L-
    isoleucyl-L-alanyl-L-prolyl- (9CI) (CA INDEX NAME)
SQL
   10
SEQ
       1 RHKOKIIAPS
        _____
HITS AT:
        1-10
1.3
   ANSWER 9 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
   251651-17-9 REGISTRY
CN
   L-Valine, L-methionyl-L-seryl-L-arginyl-L-lysyl-L-histidyl-L-lysyl-L-
```

```
tryptophyl-L-lysyl-L-leucyl-L-serylglycyl- (9CI) (CA INDEX NAME)
SOL
SEO
         1 MSRKHKWKLS GV
           HITS AT:
           1 - 12
L3
    ANSWER 10 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     225518-96-7 REGISTRY
CN
     L-Threonine, L-histidyl-L-lysylglycyl-L-lysyl-L-lysyl-L-.alpha.-aspartyl-L-
     threonyl-L-seryl-L-isoleucyl- (9CI) (CA INDEX NAME)
SOL
SEO
         1 HKGKKDTSIT
           =========
HITS AT:
           1-10
    ANSWER 11 OF 31 REGISTRY COPYRIGHT 2001 ACS
1.3
RN
     201799-95-3 REGISTRY
CN
    L-Leucine, L-.alpha.-aspartyl-L-lysyl-L-histidyl-L-lysyl-L-leucyl-L-lysyl-
    L-lysyl-L-seryl-L-.alpha.-glutamyl- (9CI) (CA INDEX NAME)
SQL
    10
SEQ
         1 DKHKLKKSEL
           _____
HITS AT:
           1 - 10
L3
    ANSWER 12 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN .
     201799-94-2 REGISTRY
     L-Lysine, L-arginyl-L-.alpha.-glutamylglycyl-L-.alpha.-aspartyl-L-lysyl-L-
CN
    histidyl-L-lysyl-L-leucyl-L-lysyl- (9CI) (CA INDEX NAME)
SQL
    10
SEQ
         1 REGDKHKLKK
           _____
HITS AT:
           1-10
    ANSWER 13 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
     187816-25-7 REGISTRY
CN
    L-Alanine, L-.alpha.-glutamyl-L-alanyl-L-prolyl-L-histidyl-L-lysyl-L-
    phenylalanyl-L-lysyl-L-seryl- (9CI) (CA INDEX NAME)
SQL
      🖈 1 EAPHKFKSA
SEQ
HITS AT:
           1-9
    ANSWER 14 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
     187816-07-5 REGISTRY
RN
CN
     L-Valine, L-.alpha.-glutamyl-L-alanyl-L-prolyl-L-histidyl-L-lysyl-L-
    phenylalanyl-L-lysyl-L-asparaginyl- (9CI) (CA INDEX NAME)
SQL
SEQ
         1 EAPHKFKNV
           =======
HITS AT:
           1 - 9
     ANSWER 15 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
     186258-89-9 REGISTRY
CN
     L-Histidine, L-alanyl-L-lysyl-L-arginyl-L-histidyl-L-histidyl-L-lysyl-L-
     tyrosyl-L-lysyl-L-arginyl-L-lysyl-L-phenylalanyl- (9CI) (CA INDEX NAME)
```

```
OTHER NAMES:
CN
         15: PN: WO0040965 PAGE: 19 claimed protein
SQL
SEO
                  1 AKRHHKYKRK FH
                      HITS AT:
                      1-12
          ANSWER 16 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
      176260-60-9 REGISTRY
RN
          histidyl]-L-lysyl]-L-glutaminyl]-L-lysyl]-L-isoleucyl]-L-isoleucyl]-L-
          alanyl]-L-prolyl]-L-alanyl]- (9CI) (CA INDEX NAME)
SQL
         12
SEO
                  1 CRHKQKIIAP AK
                      **********
HITS AT:
                      1-12
          ANSWER 17 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
          176260-59-6 REGISTRY
           L-Alanine, \ N-[1-[N-[N-[N-[N2-[N2-[N2-[N2-[N-[N2-(N-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteinyl-L-cysteiny
ĆN
          arginyl]-L-histidyl]-L-lysyl]-L-glutaminyl]-L-lysyl]-L-isoleucyl]-L-
          isoleucyl]-L-alanyl]-L-prolyl]- (9CI) (CA INDEX NAME)
SQL
         12
SEQ
                  1 CCRHKQKIIA PA
                      HITS AT:
                      1-12
          ANSWER 18 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
          161174-90-9 REGISTRY
RN
          L-Tyrosinamide, L-cysteinyl-L-histidyl-L-lysyl-L-leucyl-L-lysyl-L-alanyl-L-
CN
          alanyl-L-leucyl-L-cysteinyl-, cyclic (1.fwdarw.9)-disulfide (9CI) (CA
          INDEX NAME)
SQL
         10
SEQ
                  1 CHKLKAALCY
                      =========
HITS AT:
                   1-10
NTE modified
----- location ----- description
______
terminal mod. Tyr-10 - C-terminal amide bridge Cys-1 - Cys-9 disulfide bridge
L3
          ANSWER 19 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
          161174-87-4 REGISTRY
          L-Tyrosinamide, L-cysteinyl-L-histidyl-L-lysyl-L-leucyl-L-lysyl-L-alanyl-L-
CN
          alanyl-L-leucyl-L-cysteinyl- (9CI) (CA INDEX NAME)
SQL
SEQ
                  1 CHKLKAALCY
                     _____
HITS AT: 1-10
NTE modified
                                  ----- location ----- description
```

\_\_\_\_\_\_

```
terminal mod.
                 Tyr-10
                                           C-terminal amide
     ANSWER 20 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
     157566-35-3 REGISTRY
CN
     L-Glutamic acid, L-arginyl-L-.alpha.-glutamylglycyl-L-.alpha.-aspartyl-L-
     lysyl-L-histidyl-L-lysyl-L-leucyl-L-lysyl-L-lysyl-L-seryl-L.alpha.-
     glutamyl-L-leucyl-L-lysyl- (9CI) (CA INDEX NAME)
SQL
     15
SEO
         1 REGDKHKLKK SELKE
           ________________
HITS AT:
           1-15
L3
     ANSWER 21 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     144776-43-2 REGISTRY
CN
     L-Lysine, N2-[N-[N2-[N-(N2-L-arginyl-L-arginyl)-L-leucyl]-L-histidyl]-L-
     lysyl]-L-leucyl]- (9CI) (CA INDEX NAME)
SQL
SEQ
         1 RRLHKLK
HITS AT:
           1-7
     ANSWER 22 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
     144776-41-0 REGISTRY
CN
     L-Lysine, N2-[N-[N2-[N-(N2-L-arginyl-L-arginyl)-L-.alpha.-glutamyl]-L-
     histidyl]-L-lysyl]-L-leucyl]- (9CI) (CA INDEX NAME)
SQL
SEQ
         1 RREHKLK
           ======
HITS AT:
           1 - 7
L3
     ANSWER 23 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     144776-40-9 REGISTRY
CN
     L-Lysine, N2-[N-[N2-[N-[N-(N2-L-arginyl-L-arginyl)-L-seryl]-L-histidyl]-L-
     lysyl]-L-leucyl]- (9CI) (CA INDEX NAME)
SQL
SEO
         1 RRSHKLK
           _____
HITS AT:
           1-7
T.3
    ANSWER 24 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
     121795-39-9 REGISTRY
CN
     L-Cysteine, L-prolyl-L-threonyl-L-alpha.-glutamyl-L-alanyl-L-arginyl-L-
     histidyl-L-lysyl-L-glutaminyl-L-lysyl-L-isoleucyl-L-valyl-L-alanyl-L-
     prolyl-L-valyl- (9CI) (CA INDEX NAME)
SQL
    15
SEQ
         1 PTEARHKQKI VAPVC
           HITS AT:
           1-15
     ANSWER 25 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
     115154-42-2 REGISTRY
CN
     L-Lysine, N2-[N-[N2-[N-[N-(N-L-.alpha.-aspartyl-L-seryl)-L-
     histidyl]-L-histidyl]-L-lysyl]-L-alanyl]-L-lysyl]-L-alanyl]- (9CI)
     INDEX NAME)
SQL
    9
```

```
SEO
        1 DSHHKAKAK
HITS AT:
          1-9
    ANSWER 26 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
    115154-41-1 REGISTRY
RN
CN
    L-Lysine, L-seryl-L-histidyl-L-histidyl-L-lysyl-L-alanyl-L-lysylglycyl-
     (9CI)
          (CA INDEX NAME)
OTHER CA INDEX NAMES:
    L-Lysine, N2-[N-[N2-[N-[N2-[N-(N-L-seryl-L-histidyl)-L-histidyl]-L-lysyl]-
    L-alanyl]-L-lysyl]glycyl]-
SQL
SEO
        1 SHHKAKGK
HITS AT:
          1-8
    ANSWER 27 OF 31 REGISTRY COPYRIGHT 2001 ACS
1.3
RN
    112424-93-8 REGISTRY
CN
    D-Alaninamide, N-acetyl-3-(2-naphthalenyl)-D-alanyl-4-chloro-D-
    phenylalanyl-3-(3-pyridinyl)-D-alanyl-L-seryl-L-histidyl-N6-(3-
    pyridinylcarbonyl)-D-lysyl-L-leucyl-N6-(3-pyridinylcarbonyl)-L-lysyl-L-
    prolyl- (9CI) (CA INDEX NAME)
SQL
    10
SEQ
        1 AFASHKLKPA
          ========
          1-10
HITS AT:
NTE modified
                ----- location ----- description
_______
terminal mod. Ala-1
                                         N-acetyl
terminal mod. Ala-10
                                         C-terminal amide
modification Ala-1
                                         2-naphthalenyl<2-Naph>
modification
                Phe-2
                                         chloro<Cl>
modification
                Ala-3
                                         3-pyridinyl<3Py>
              Lys-6
modification
                                         3-pyridinylcarbonyl
                                         3-pyridinylcarbonyl
modification
                Lys-8
L3
    ANSWER 28 OF 31 REGISTRY COPYRIGHT 2001 ACS
RN
    97461-89-7 REGISTRY
    L-Lysine, N2-[1-(N2-L-histidyl-L-lysyl)-L-prolyl]- (9CI) (CA INDEX NAME)
CN
SQL
SEO
        1 HKPK
HITS AT:
          1 - 4
    ANSWER 29 OF 31 REGISTRY COPYRIGHT 2001 ACS
L3
RN
    92269-40-4 REGISTRY
    L-Isoleucine, N-[N2-[N2-[N2-(N-L-arginyl-L-histidyl)-L-lysyl]-L-
CN
    glutaminyl]-L-lysyl]- (9CI) (CA INDEX NAME)
SQL
        1 RHKQKI
SEO
          ======
HITS AT:
          1-6
```

```
L3 ANSWER 30 OF 31 REGISTRY COPYRIGHT 2001 ACS
```

RN 92269-39-1 REGISTRY

CN L-Lysine, N2-[N2-[N2-[N-(N2-L-alanyl-L-arginyl)-L-histidyl]-L-lysyl]-Lglutaminyl]- (9CI) (CA INDEX NAME)

SQL 6

SEQ 1 ARHKQK

HITS AT: 1-6

L3 ANSWER 31 OF 31 REGISTRY COPYRIGHT 2001 ACS

RN 92227-36-6 REGISTRY

CN L-Valine, N-[N-[N2-[N2-(N2-L-histidyl-L-lysyl)-L-glutaminyl]-L-lysyl]-L-isoleucyl]- (9CI) (CA INDEX NAME)

SQL 6

SEQ 1 HKQKIV =====

HITS AT: 1-6

FILE 'CAPLUS' ENTERED AT 08:54:46 ON 06 JUL 2001 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT. PLEASE SEE "HELP USAGETERMS" FOR DETAILS. COPYRIGHT (C) 2001 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications.

FILE COVERS 1947 - 6 Jul 2001 VOL 135 ISS 3 FILE LAST UPDATED: 5 Jul 2001 (20010705/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

This file supports REG1stRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

CAplus now provides online access to patents and literature covered in CA from 1947 to the present. On April 22, 2001, bibliographic information and abstracts were added for over 2.2 million references published in CA from 1947 to 1966.

The CA Lexicon is now available in the Controlled Term (/CT) field. Enter HELP LEXICON for full details.

Attention, the CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

L3 31 SEA FILE=REGISTRY ABB=ON ^.{0-6}HK[ALIVPFWMSTYNQCG]K.{0-6}^/SQ

L4 25 SEA FILE=CAPLUS ABB=ON L3 Registry file answer set crossed over into CAPLUS to get citations

=> d ibib abs hitrn 14 1-25; fil hom

ANSWER 1 OF 25 CAPLUS COPYRIGHT 2001 ACS L4

ACCESSION NUMBER:

2001:429545 CAPLUS

TITLE:

Peptides and peptidomimetics with structural

similarity to human p53 that activate p53 function

INVENTOR(S):

Halazonetis, Thanos; Hartwig, Wolfgang Bayer Corp., USA; The Wistar Institute

PATENT ASSIGNEE(S): SOURCE:

U.S., 22 pp., Cont.-in-part of U.S. 6,169,073.

CODEN: USXXAM

DOCUMENT TYPE:

Patent

LANGUAGE:

English

2

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATE	ENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6	6245886	B1	20010612	US 1997-894327	19971204
US 6	6169073	B1	20010102	US 1995-392542	19950216
WO S	9625434	A1	19960822	WO 1996-US1535	19960216

W: AU, CA, JP, KR, US

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.:

US 1995-392542 A2 19950216 WO 1996-US1535 W 19960216

The present invention provides peptides and peptidomimetics corresponding AΒ to part or to the entirety of the region encompassed by residues 360-386 of human p53, said peptides and peptidomimetics characterized by the ability to activate DNA binding of wild-type p53 and to select tumor-derived p53 mutants. Pharmaceutical compns. of the compds. of the invention and methods of using these compns. therapeutically are also

344422-23-7 - Use Registry # to match citation to sequence TΤ

RL: PRP (Properties)

(unclaimed sequence; peptides and peptidomimetics with structural similarity to human p53 that activate p53 function)

REFERENCE COUNT:

34

REFERENCE(S):

- (1) Anon; EP 0518650 1992 CAPLUS
- (2) Anon; WO 94/08241 1994 CAPLUS
- (3) Anon; WO 94/10306 1994 CAPLUS
- (4) Anon; WO 94/12202 1994 CAPLUS
- (5) Anon; WO 95/17213 1995 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 2 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

2001:284116 CAPLUS

DOCUMENT NUMBER:

134:306975

TITLE:

Recombinant factor C and factor C fragments for endotoxin detection or removal and for use as

anti-microbials

INVENTOR(S): PATENT ASSIGNEE(S): Ding, Jeak Ling; Ho, Bow; Tan, Nguan Soon National University of Singapore, Singapore

SOURCE:

PCT Int. Appl., 123 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: PATENT INFORMATION:

PATENT NO.

KIND DATE

APPLICATION NO. DATE

```
20001013
     WO 2001027289
                     A2
                            20010419
                                          WO 2000-SG162
            RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
             CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
                                        US 1999-159569 P 19991015
US 2000-626795 A 20000726
PRIORITY APPLN. INFO.:
     Recombinant fragments of Factor C are disclosed. These proteins and
     peptides show great potency in recognizing, binding to, neutralizing, and
     removing endotoxin. These mols. can thus be used for anti-microbial,
     anti-endotoxin, and anti-sepsis therapy. SSCrFCES is a 38 kDa protein
     representing the LPS-binding domain of Factor C. The ability of SSCrFCES
     to bind lipid A was analyzed using an ELISA-based assay as well as surface
     plasmon resonance. Surface plasmon resonance similarly carried out for
     SSCrFC-sushi-1,2,3-GFP, SSCrFC-sushi-1-GFP, and SSCrFC-sushi-3-GFP
     confirmed their superior affinity for endotoxin. The 50 \mbox{\%}
     endotoxin-neutralizing concn. of SSCrFCES against 200 EU of endotoxin is
     0.069 .mu.M, suggesting that SSCrFCES is an effective inhibitor of Limulus
     amoebocyte lysis coagulation cascade. Although partially attenuated by
     human serum, as low as 1 .mu.M of SSCrFCES inhibits the LPS-induced
     secretion of hTNF-.alpha. and hIL-8 THP-1 and human peripheral blood
     mononuclear cells with a potency more superior than polymyxin B. SSCrFCES
     is non-cytotoxic, with a clearance rate of 4.7 mL/min. The LD90 of
     SSCrFCES for LPS lethality in mice is achieved at 2 .mu.M. These results
     demonstrate the endotoxin-neutralizing capability of SSCrFCES in vitro and
     in vivo, as well as its potential for use in the treatment of
     endotoxin-induced septic shock. Also embodied in this application is the
     use of the sushi peptides and their mutant derivs. as potent
     antimicrobials. Further embodied in this application is the use of sushi
     peptides or sushi recombinant proteins to remove endotoxin from liqs.
IT
     334993-69-0P
     RL: ARG (Analytical reagent use); BAC (Biological activity or effector,
     except adverse); BPN (Biosynthetic preparation); PRP (Properties); THU
     (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP
     (Preparation); USES (Uses)
        (Sushi 3 peptide; recombinant factor C and factor C fragments for
        endotoxin detection or removal and for use as anti-microbials)
     ANSWER 3 OF 25 CAPLUS COPYRIGHT 2001 ACS
L4
ACCESSION NUMBER:
                         2001:211598 CAPLUS
DOCUMENT NUMBER:
                         134:351765
TITLE:
                         Recombinant human adenovirus: targeting to the human
                         transferrin receptor improves gene transfer to brain
                         microcapillary endothelium
AUTHOR(S):
                         Xia, Haibin; Anderson, Brian; Mao, Qinwen; Davidson,
                         Beverly L.
CORPORATE SOURCE:
                         Program in Gene Therapy, Departments of Internal
                         Medicine, University of Iowa College of Medicine, Iowa
                         City, IA, 52242, USA
SOURCE:
                         J. Virol. (2000), 74(23), 11359-11366
                         CODEN: JOVIAM; ISSN: 0022-538X
PUBLISHER:
                         American Society for Microbiology
DOCUMENT TYPE:
                         Journal
LANGUAGE:
                         English
AΒ
     Some inborn errors of metab. due to deficiencies of sol. lysosomal enzymes
```

cause global neurodegenerative disease. Representative examples include the infantile and late infantile forms of the ceroid lipofuscinoses (CLN1 or CLN2 deficiency, resp.) and mucopolysaccharidoses type VII (MPS VII), a deficiency of .beta.-glucuronidase. Treatment of the central nervous system component of these disorders will require widespread protein or enzyme replacement, either through dissemination of the protein or through dissemination of a gene encoding it. We hypothesize that transduction of brain microcapillary endothelium (BME) with recombinant viral vectors, with secretion of enzyme product basolaterally, could allow for widespread enzyme dissemination. To achieve this, viruses should be modified to target the BME. This requires (i) identification of a BME-resident target receptor, (ii) identification of motifs targeted to that mol., (iii) the construction of modified viruses to allow for binding to the target receptor, and (iv) demonstrated transduction of receptor-expressing cells. In proof of principal expts., we chose the human transferrin receptor (hTfR), a mol. found at high d. on human BME. A nonamer phage display library was panned for motifs which could bind hTfR. Forty-three clones were sequenced, most of which contained an AKxxK/R, KxKxPK/R, or KxK motif. Ten peptides representative of the three motifs were cloned into the HI loop of adenovirus type 5 fiber. All motifs tested retained their ability to trimerize and bind transferrin receptor, and seven allowed for recombinant adenovirus prodn. Importantly, the fiber-modified viruses facilitated increased gene transfer (2- to 34-fold) to hTfR expressing cell lines and human brain microcapillary endothelia expressing high levels of endogenous receptor. Our data indicate that adenoviruses can be modified in the HI loop for expanded tropism to the hTfR.

IT 338970-52-8P 338970-56-2P

RL: BPR (Biological process); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)

(recombinant human adenovirus: targeting to the human transferrin receptor improves gene transfer to brain microcapillary endothelium)

REFERENCE COUNT:

36

REFERENCE(S):

- (1) Anderson, R; Gene Ther 2000, V7, P1034 CAPLUS
- (2) Bosch, A; Hum Gene Ther 2000, V11, P1139 CAPLUS
- (4) Broadwell, R; Exp Neurol 1996, V142, P47 CAPLUS
- (6) Chartier, C; J Virol 1996, V70, P4805 CAPLUS
- (8) Douglas, J; Nat Biotechnol 1996, V14, P1574 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 · ANSWER 4 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:728698 CAPLUS

DOCUMENT NUMBER: 134:91012

TITLE: Co-polymer of histidine and lysine markedly enhances

transfection efficiency of liposomes

Aumuon (c)

AUTHOR(S): Chen, Q-R.; Zhang, L.; Stass, S. A.; Mixson, A. J. CORPORATE SOURCE: Department of Pathology and Greenebaum Cancer Center,

University of Maryland Baltimore, Baltimore, MD,

21201, USA

SOURCE: <u>Gene Ther. (2000), 7(19), 1698-1705</u>

CODEN: GETHEC; ISSN: 0969-7128

PUBLISHER: Nature Publishing Group

DOCUMENT TYPE: Journal LANGUAGE: English

Development of nonviral delivery systems is progressing toward a transfection efficiency sufficient to affect metabolic and neoplastic diseases in humans. Nevertheless, inadequate transfection efficiency of target cells with current nonviral systems still limits the utility of this therapy. In the current study, we have detd. that a co-polymer of histidine and lysine (H-K) enhances the transfection efficiency of liposomes, a leading nonviral system. We found that in the absence of serum, the addn. of this polymer increased transfection as much as 10-fold

in comparison with the liposome: DNA complex alone. More impressively, the co-polymer in the presence of serum increased transfection efficiency up to 100-fold. Furthermore, in vivo expression of luciferase in a tumor increased 15-fold with the addn. of H-K polymer to the liposome: plasmid DNA complexes. Without liposomes, the H-K polymer had little to no effect on transfection efficiency. We anticipate that further modifications of this co-polymer will yield mols. with both increased complexity and transfection efficiency.

# IT 316821-90-6P

RL: BPR (Biological process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)

(co-polymer of histidine and lysine enhances transfection efficiency of liposomes)

REFERENCE COUNT:

35

REFERENCE(S):

- (1) Behr, J; Proc Natl Acad Sci USA 1989, V86, P6982 CAPLUS
- (2) Boussif, O; Proc Natl Acad Sci USA 1995, V92, P7297 CAPLUS
- (3) Budker, V; Nat Biotechnol 1996, V14, P760 CAPLUS
- (4) Cayot, P; Anal Biochem 1997, V249, P184 CAPLUS
- (5) Chen, Q; Cancer Res 1999, V59, P3308 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

2000:475506 CAPLUS

DOCUMENT NUMBER:

133:115150

TITLE:

Methods using a histatin, histatin fragment, or related peptide for treating cystic fibrosis Spacciapoli, Peter; Rothstein, David M.; Friden, Phillip M.

PATENT ASSIGNEE(S):

INVENTOR(S):

Periodontix, Inc., USA PCT Int. Appl., 27 pp.

SOURCE: PCT Int. Appl.,

CODEN: PIXXD2

DOCUMENT TYPE:

Patent English

LANGUAGE:

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000040204	A2	20000713	WO 2000-US480	20000107

W: AU, CA, NZ

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.:

US 1999-226666 A 19990108

OTHER SOURCE(S): MARPAT 133:115150

AB Methods are disclosed for treating cystic fibrosis in a mammal that include administering an effective amt. of a histatin, a histatin fragment, or a histatin-related peptide.

IT 186258-89-9 282712-87-2

RL: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (histatin, histatin fragment, or related peptide for treating cystic fibrosis)

L4 ANSWER 6 OF 25 CAPLUS COPYRIGHT 2001 ACS ACCESSION NUMBER: 2000:386830 CAPLUS

DOCUMENT NUMBER:

133:218720

TITLE:

Ni(II) Specifically Cleaves the C-Terminal Tail of the Major Variant of Histone H2A and Forms an Oxidative

Damage-Mediating Complex with the Cleaved-Off

Octapeptide

AUTHOR(S): Bal, Wojciech; Liang, Rongti; Lukszo, Jan; Lee,

Sang-Han; Dizdaroglu, Miral; Kasprzak, Kazimierz S. Laboratory of Comparative Carcinogenesis, National

Cancer Institute, Frederick, MD, 21702, USA

Chem. Res. Toxicol. (2000), 13(7), 616-624

CODEN: CRTOEC; ISSN: 0893-228X

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal LANGUAGE: English

CORPORATE SOURCE:

SOURCE:

AB The acetyl-TESHHK-amide peptide, modeling a part of the C-terminal "tail" of histone H2A, was found previously by us to undergo at pH 7.4 a Ni(II)-assisted hydrolysis of the E-S peptide bond with formation of a stronger Ni(II) complex with the SHHK-amide product (1998). To further characterize the hydrolysis and test the resulting Ni(II) complex for redox activity, bovine histone H2A and three peptides were investigated: acetyl-LLGKVTIAQGGVLPNIQAVLLPKKTESHHKAKGK (H2A34), modeling the entire "C-tail" of H2A; SHHKAKGK (H2A8), modeling the cutoff product of hydrolysis; and acetyl-KTESHKAKGK (H2A10), modeling a putative Ni(II) binding site in a minor variant H2A.4 of human histone H2A. Ni(II)-assisted hydrolysis of H2A and H2A34 was found to proceed approx. 7-fold faster than that of the Ni(II)-acetyl-TESHHK-amide complex under comparable conditions. In both cases, the Ni(II) complex with H2A8 was the smaller product of the hydrolysis, indicating a high site specificity of the reaction. Of three other metals tested with H2A34, only Cu(II) cleaved the E-S bond, although much less efficiently than Ni(II); Co(II) and Zn(II) had no effect whatsoever. The H2A10 peptide appeared to be fully resistant to hydrolytic cleavage and did not exhibit any redox activity vs. H2O2 in the presence of Ni(II) at pH 7.4. Likewise, redox-inactive was the Ni(II)-H2A34 complex. In contrast, the Ni(II)-H2A8 complex promoted oxidative damage of pUC19 DNA by H2O2, evidenced by a significant increase in the no. of single strand breaks and nucleobase modifications typical for a hydroxyl radical-like species attack on DNA. Interestingly, instead of 8-oxopurines, the corresponding formamidopyrimidines were the major products of the damage. difference in redox activity between the Ni(II)-H2A34 and Ni(II)-H2A8 complexes is most likely assocd. With their different geometries: octahedral and square planar, resp. Incubation of the Ni(II)-H2A8 complex with H2O2 also resulted in degrdn. of the peptide ligand, esp. at its Ser and His residues. Thus, binding of Ni(II) to the ESHHK motif of the histone H2A C-tail is damaging to the histone C-terminal tail and to histone-assocd. DNA. The results support a dual mechanism of Ni(II)-induced carcinogenesis, including both genotoxic and epigenetic effects.

# IT 115154-41-1 290374-35-5

RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study)

(Ni(II) specifically cleaves C-terminal tail of major variant of histone H2A and forms oxidative damage-mediating complex with cleaved-off octapeptide)

REFERENCE COUNT:

REFERENCE(S):

54

- (1) Arents, G; Proc Natl Acad Sci USA 1991, V88, P10148 CAPLUS
- (2) Arents, G; Proc Natl Acad Sci USA 1995, V92, P11170 CAPLUS
- (3) Bal, W; Arch Biochem Biophys 1999, V364, P161 CAPLUS
- (4) Bal, W; Chem Res Toxicol 1995, V8, P683 CAPLUS
- (5) Bal, W; Chem Res Toxicol 1997, V10, P915 CAPLUS
- ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 7 OF 25 CAPLUS COPYRIGHT 2001 ACS ACCESSION NUMBER: 2000:295355 CAPLUS

DOCUMENT NUMBER:

133:103515

TITLE:

Analysis of foreign epitope inserts in HBcAq.

approaches to solving the problem of core particle

self-assembly

AUTHOR(S):

SOURCE:

Karpenko, L. I.; Ivanisenko, V. A.; Pika, I. S.; Chikaev, N. A.; Eroshkin, A. M.; Melamed, N. V.;

Veremeiko, T. A.; Il'ichev, A. A.

CORPORATE SOURCE:

Institute of Biotechnology, State Research Center

VECTOR, Novosibirsk, 633159, Russia Mol. Biol. (2000), 34(2), 194-199 CODEN: MOLBBJ; ISSN: 0026-8933 MAIK Nauka/Interperiodica Publishing

PUBLISHER:

Journal.

DOCUMENT TYPE: LANGUAGE:

English

The hepatitis B virus core antigen (HBcAg) is a promising protein carrier for exposing the epitopes of various human and animal pathogens. HBcAq-based chimeric proteins can be used in creating highly efficient vaccines; however, not all chimeric HBcAg with foreign epitope inserts are capable of assembly into virus-like particles. Using computer programs ProAnalyst, SALIX, and QSARPro, the authors examd. the relation between the self-assembly capability of chimeric HBcAg and the physicochem. properties of the inserts. The self-assembly was impaired when the inserted peptides contained highly hydrophobic and bulky residues tending to form .beta.-structures; this esp. concerned the C-proximal residues in the insert. Recommendations were elaborated for constructing foreign epitopes that would ensure correct self-assembly of chimeric HBcAq particles.

IT278169-06-5D, fusion products with hepatitis B core antigen RL: BPR (Biological process); PRP (Properties); BIOL (Biological study); PROC (Process)

(self-assembly core antigen particles expressing foreign epitopes in hepatitis B core antigen)

REFERENCE COUNT:

26

REFERENCE(S):

(1) Argos, P; EMBO J 1988, V7, P819 CAPLUS

(2) Bogardt, R; J Mol Evol 1980, V15, P197 CAPLUS (3) Borisova, G; J Virology 1993, V67, P3696 CAPLUS

(4) Boulter, N; Vaccine 1995, V13, P1152 CAPLUS (6) Clarke, B; Nature 1987, V330, P381 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 8 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

1999:479138 CAPLUS

DOCUMENT NUMBER:

AUTHOR(S):

132:11552

TITLE:

T cell response pattern to glutamic acid decarboxylase

65 (GAD65) peptides of newly diagnosed type 1 diabetic

patients sharing susceptible HLA haplotypes

Rharbaoui, F.; Mayer, A.; Granier, C.; Bouanani, M.;

Thivolet, C.; Pau, B.; Orgiazzi, J.; Madec, A.-M.

CORPORATE SOURCE: SOURCE:

Faculte de Pharmacie, Montpellier, Fr. Clin. Exp. Immunol. (1999), 117(1), 30-37

CODEN: CEXIAL; ISSN: 0009-9104

PUBLISHER:

Blackwell Science Ltd.

DOCUMENT TYPE:

Journal

LANGUAGE:

English

Autoantibodies and autoreactive T lymphocytes directed against several pancreatic .beta. cell proteins such as GAD65 have been identified in the circulation before and at the onset of clin. type 1 (insulin-dependent) diabetes. Using GAD65 synthetic peptides, the authors studied the

proliferative response of peripheral blood mononuclear cells (PBMC) either from recently diagnosed type 1 diabetic patients, of whom the majority share the disease-assocd. HLA class II haplotype (DR4-DQB1\*0201 or DR3-DQB1\*0302), or from HLA-matched control subjects. The authors found that 67% (14/21) of the type 1 diabetic patients and 39% (9/23) of the control subjects exhibited a pos. proliferative response. Compared with control subjects, however, PBMC from diabetic patients proliferated more frequently in the presence of peptide pools from the C-terminal region of GAD65 (amino acids 379-585). Diabetic patients with the same HLA-DQ or HLA-DR alleles showed partially identical T cell reactivity, but no clear correlation could be made between MHC class II specificity and T cell epitopes because of multiple combinations of class II alleles. by flow cytometry, the authors studied the direct binding of GAD65 peptides to MHC class II mols. of Epstein-Barr virus (EBV)-transformed B (EBV-B) cells obtained from a diabetic patient. They found that 11 GAD peptides were able to bind to the highly susceptible haplotype DRB1\*0301/0401-DQA1\*0301/0501-DQB1\*0302/0201 on the surface of EBV-B cells in partial correlation with the results obtained in the proliferation assays.

# IT 251651-17-9

RL: PRP (Properties)

(T cell response pattern to glutamic acid decarboxylase 65 (GAD65) peptides of newly diagnosed type 1 diabetic patients sharing susceptible HLA haplotypes)

REFERENCE COUNT:

32

REFERENCE(S):

- (2) Atkinson, M; J Clin Invest 1994, V94, P2125 CAPLUS
- (4) Baekkeskov, S; Nature 1990, V347, P151 CAPLUS
- (7) Brooks-Worrell, B; J Immunol 1996, V157, P5668 CAPLUS
- (9) Calvo-Calle, J; J Immunol 1997, V159, P1362 CAPLUS
- (10) Durinovic-Bello, I; Diabetes 1996, V45, P795 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

1999:393960 CAPLUS

DOCUMENT NUMBER:

131:39718

TITLE:

SOURCE:

INVENTOR(S):

Antifungal and antibacterial histatin-based peptides Oppenheim, Frank G.; Xu, Tao; Roberts, F. Donald;

Spacciapoli, Peter; Friden, Phillip M.

PATENT ASSIGNEE(S):

Periodontix, Inc., USA; Trustees of Boston University

U.S., 35 pp., Cont.-in-part of U.S. 5,631,228.

CODEN: USXXAM

DOCUMENT TYPE:

Patent English

LANGUAGE:

NUM COUNTS 7

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND DA	ATE	APPLICATION NO.	DATE						
US 5912230	A 19	9990615	US 1998-973559	19980311						
US 5486503	A 19	9960123	US 1994-287717	19940809						
US 5631228	A 19	9970520	US 1995-481888	19950607						
WO 9640768	A2 19	9961219	WO 1996-US9374	19960607						
WO 9640768	A3 19	9970306								
W: AL, AM,	AT, AU, A	AZ, BB, BG, 1	BR, BY, CA, CH, CN,	CZ, DE, DK, EE,						
ES, FI,	GB, GE, F	HU, IL, IS,	JP, KE, KG, KP, KR,	KZ, LK, LR, LS,						
			MW, MX, NO, NZ, PL,							
SE, SG	•	, , ,								
RW: KE, LS,	MW, SD, S	SZ, UG, AT,	BE, CH, DE, DK, ES,	FI, FR, GB, GR,						
			BF, BJ, CF, CG, CI.							

```
PRIORITY APPLN. INFO.:
                                       US 1991-786571
                                                        B1 19911101
                                       US 1993-145030
                                                        B1 19931028
                                       US 1994-287717
                                                        A2 19940809
                                       US 1995-481888
                                                        A2 19950607
                                       WO 1996-US9374
                                                        W 19960607
     Histatin-based peptides representing defined portions of the amino acid
     sequences of naturally occurring human histatins, and methods for
     treatment of fungal or bacterial infection, are described. The
     histatin-based peptides represent the active anti-fungal and
     anti-bacterial region of naturally occurring human histatins.
IΤ
     186258-89-9 186258-89-9D, derivs.
     RL: BAC (Biological activity or effector, except adverse); THU
     (Therapeutic use); BIOL (Biological study); USES (Uses)
        (histatin-based peptides for antifungal and antibacterial agents)
REFERENCE COUNT:
                         41
                         (1) Anon; JP 03261747 1994 CAPLUS
REFERENCE(S):
                         (2) Anon; JP 06234653 1994 CAPLUS
                         (3) Anon; JP 06287146 1994 CAPLUS
                         (4) Anon; WO 9421672 1994 CAPLUS
                         (5) Chang, C; Peptides 1990 1991, P843 CAPLUS
                         ALL CITATIONS AVAILABLE IN THE RE FORMAT
     ANSWER 10 OF 25 CAPLUS COPYRIGHT 2001 ACS
T.4
ACCESSION NUMBER:
                        1999:208580 CAPLUS
DOCUMENT NUMBER:
                        130:232464
TITLE:
                        Antifungal and antibacterial D-amino acid
                        histatin-based peptides
                        Oppenheim, Frank G.; Xu, Tao; Roberts, F. Donald;
INVENTOR(S):
                        Spacciapoli, Peter; Friden, Phillip M.
                        Periodontix, Inc., USA; Trustees of Boston University
PATENT ASSIGNEE(S):
SOURCE:
                        U.S., 34 pp., Cont.-in-part of U.S. 5,631,228.
                        CODEN: USXXAM
DOCUMENT TYPE:
                        Patent
                        English
LANGUAGE:
FAMILY ACC. NUM. COUNT:
                        7
PATENT INFORMATION:
     PATENT NO.
                     KIND DATE
                                          APPLICATION NO.
                                                          DATE
                     ----
                                          -----
                                                          ------
                    A
     US 5885965
                           19990323
                                          US 1998-973563
                                                           19980312
     US 5486503
                     Α
                           19960123
                                          US 1994-287717
                                                           19940809
                     Α
                           19970708
     US 5646119
                                          US 1995-485273
                                                           19950607
    WO 9640770
                     A2
                           19961219
                                          WO 1996-US9962
                                                          19960607
     WO 9640770
                     A3
                           19970206
         W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE,
             ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS,
             LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,
             SE, SG
         RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,
             IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA
PRIORITY APPLN. INFO.:
                                       US 1991-786571
                                                        B1 19911101
                                       US 1993-145030
                                                        B1 19931028
                                       US 1994-287717
                                                        A2 19940809
                                       US 1995-485273
                                                        A2 19950607
                                       WO 1996-US9962
                                                        W 19960607
AB
     D-Amino acid histatins and histatin-based peptides and methods for
```

AB D-Amino acid histatins and histatin-based peptides and methods for treatment of fungal or bacterial infection are described. These D-amino acid histatins and histatin-based peptides are longer-acting antifungal or antibacterial agents than their L-enantiomeric analogs.

IT 186258-89-9D, D-amino acid-contg.

RL: BAC (Biological activity or effector, except adverse); PRP

(Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (antifungal and antibacterial D-amino acid histatin-based peptides) REFERENCE COUNT: 32

REFERENCE COUNT:

REFERENCE(S): (1) Anon; JP 03261747 1994 CAPLUS (2) Anon; JP 06234653 1994 CAPLUS

(3) Anon; JP 06287146 1994 CAPLUS (4) Anon; WO 9421672 1994 CAPLUS

(5) Berkowitz; US 5459237 1995 CAPLUS ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1999:169524 CAPLUS

DOCUMENT NUMBER: 131:1843

TITLE: A 7-amino-acid insert in the heavy chain nucleotide

binding loop alters the kinetics of smooth muscle

myosin in the laser trap

AUTHOR(S): Lauzon, Anne-Marie; Tyska, Matthew J.; Rovner, Arthur

S.; Freyzon, Yelena; Warshaw, David M.; Trybus,

Kathleen M.

CORPORATE SOURCE: Department of Molecular Physiology and Biophysics,

University of Vermont, Burlington, VT, 05405, USA J. Muscle Res. Cell Motil. (1998), 19(8), 825-837

CODEN: JMRMD3; ISSN: 0142-4319

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal LANGUAGE: English

SOURCE:

Two smooth muscle myosin heavy chain isoforms differ by a 7-amino-acid AB insert in a flexible surface loop located near the nucleotide binding The non-inserted isoform is predominantly found in tonic muscle, while the inserted isoform is mainly found in phasic muscle. The inserted isoform has twice the actin-activated ATPase activity and actin filament velocity in the in vitro motility assay as the non-inserted isoform. We used the laser trap to characterize the mol. mechanics and kinetics of the inserted isoform ((+)insert) and of a mutant lacking the insert ((-)insert), analogous to the isoform found in tonic muscle. constructs were expressed as heavy meromyosin using the baculovirus/insect cell system. Unitary displacement (d) was similar for both constructs (.apprx. 10 nm) but the attachment time ton for the (-)insert was twice as long as for the (+)insert regardless of the [MgATP]. Both the relative av. isometric force (Favg(-insert)/Favg(+insert)) = 1.1.+-.0.2 (mean .+-. SE) using the in vitro motility mixt. assay, and the unitary force (F .apprx. 1 pN) using the laser trap, showed no difference between the two constructs. However, as under unloaded conditions, ton under loaded conditions was longer for the (-)insert compared with the (+)insert construct at limiting [MqATP]. These data suggest that the insert in this surface loop does not affect the mechanics but rather the kinetics of the cross-bridge cycle. Through comparisons of ton from d measurements at various [MgATP], we conclude that the insert affects two specific steps in the cross-bridge cycle, i.e., MgADP release and MgATP binding.

IT 225518-96-7

RL: BSU (Biological study, unclassified); BIOL (Biological study) (7-amino-acid insert in heavy chain nucleotide binding loop alters kinetics of smooth muscle myosin in laser trap)

REFERENCE COUNT:

44

REFERENCE(S):

(1) Babij, P; Nucleic Acid Res 1993, V21, P1467 CAPLUS

(2) Bobkov, A; Proc Natl Acad Sci USA 1996, V93, P2285 CAPLUS

(3) Cooke, R; Physiol Rev 1997, V77, P671 CAPLUS

(4) Cremo, C; Biochem 1998, V37, P1969 CAPLUS

(5) Cuda, G; Biophys J 1997, V72, P1767 CAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 12 OF 25 CAPLUS COPYRIGHT 2001 ACS L4

ACCESSION NUMBER:

1998:65926 CAPLUS

DOCUMENT NUMBER:

128:127089

TITLE:

Methods for determining the presence of brain protein

S-100

INVENTOR(S):

Brundell, Jan; Nyberg, Lena

PATENT ASSIGNEE(S):

AB Sangtec Medical, Swed.; Brundell, Jan; Nyberg, Lena

SOURCE:

PCT Int. Appl., 29 pp. CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND DA	ATE	APPLICATION NO.	DATE						
WO 9801471				19970627						
•			NO, NZ, US	III MC NI DM CD						
CA 2259413		980115		LU, MC, NL, PT, SE 19970627						
AU 9735633	A1 19	980202	AU 1997-35633	19970627						
AU 715797	B2 20	000210								
EP 931094	A1 19	990728	EP 1997-932092	19970627						
R: AT, BE	, CH, DE, D	K, ES, FR,	GB, GR, IT, LI, LU,	, NL, SE, MC, PT,						
IE, FI										
BR 9710175	A 20	000111	BR 1997-10175	19970627						
JP 2000515854	T2 20	001128	JP 1998-505124	19970627						
NO 9806218	A 19	981230	NO 1998-6218	19981230						
PRIORITY APPLN. INFO	o.:		SE 1996-2677 A	19960705						

Assay methods for detq. the presence of the brain protein S-100 in a clin. AB sample which use antibodies directed to epitopes in the region from Serl . to Asn38 and from Thr82 to Glu93 of the amino acid sequence of the .beta. subunit of human S100B is provided. The methods developed include luminescent immunoassay, ELISA, and IRMA, and is used for detecting cerebral dysfunction, melanoma cancer, and for evaluating the influence of extracorporal circulation equipment on injured brain.

201799-94-2 201799-95-3

RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (monoclonal antibodies to human brain protein S-100 epitopes for diagnosis of cerebral dysfunction and melanoma)

ANSWER 13 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

1998:62220 CAPLUS

DOCUMENT NUMBER:

128:136508

TITLE:

Peptide inhibitors of selectin binding, preparation,

WO 1997-SE1164 W 19970627

and therapeutic and diagnostic use

INVENTOR(S):

Heavner, George A.; Kruszynski, Marian

PATENT ASSIGNEE(S):

Centocor, Inc., USA

SOURCE:

U.S., 29 pp. Cont.-in-part of U.S. Ser. No. 997,771,

abandoned.

CODEN: USXXAM

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

```
US 5710123
                      Α
                           19980120
                                          US 1995-454207
                                                           19950609
    WO 9414836 A
W: CA, JP, US
                                          WO 1993-US12110 19931213
                           19940707
                     A1
         RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRIORITY APPLN. INFO.:
                                       US 1992-997771
                                                           19921218
                                       WO 1993-US12110
                                                           19931213
OTHER SOURCE(S):
                        MARPAT 128:136508
     The present invention provides novel peptides having as their core region
     portions of the 109-118 amino acid sequence of P-selectin, E-selectin or
     L-selectin. The invention also provides pharmaceutical compns. comprising
     the peptides of the invention, and diagnostic and therapeutic methods
     utilizing the peptides and pharmaceutical compns. of the invention.
ΙT
     161174-87-4P 161174-90-9P
     RL: BAC (Biological activity or effector, except adverse); PRP
     (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL
     (Biological study); PREP (Preparation); USES (Uses)
        (peptide inhibitors of selectin binding, prepn., and therapeutic and
        diagnostic use)
     ANSWER 14 OF 25 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER:
                        1997:244274 CAPLUS
DOCUMENT NUMBER:
                        126:224281
TITLE:
                        cDNAs for the plant panallergen co-factor-independent
                        phosphoglycerate mutase and identification of
                        diagnostic and therapeutically useful epitopes
                         Ferreira, Fatima; Richter, Klaus; Engel, Edwin; Ebner,
INVENTOR(S):
                        Christof; Jilek, Alexander; Rheinberger, Hans-Joerg;
                        Kraft, Dietrich; Breitenbach, Michael
PATENT ASSIGNEE(S):
                        Biomay Produktions- Und Handelsgesellschaft Mbh,
                        Austria; Ferreira, Fatima; Richter, Klaus; Engel,
                        Edwin; Ebner, Christof; Jilek, Alexander; Rheinberger,
                        Hans-Joerg; Kraft, Dietrich; Breitenbach, Michael
SOURCE:
                         PCT Int. Appl., 159 pp.
                        CODEN: PIXXD2
DOCUMENT TYPE:
                         Patent
LANGUAGE:
                         German
FAMILY ACC. NUM. COUNT:
PATENT INFORMATION:
     PATENT NO.
                     KIND DATE
                                          APPLICATION NO.
                                                           DATE
                     ----
     ______
                                          _____
                                                          -----
     WO 9705258
                                          WO 1996-AT141
                     A2
                           19970213
                                                           19960802
     WO 9705258
                     А3
                          19970327
         W: AU, CA, JP, NO, US
         RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
     AT 9501320
                           19961015
                                          AT 1995-1320
                     Α
                                                           19950802
     AT 402505
                           19970625
                      В
     AU 9666059
                      A1
                           19970226
                                          AU 1996-66059
                                                           19960802
PRIORITY APPLN. INFO.:
                                       AT .1995-1320
                                                           19950802
                                       WO 1996-AT141
                                                           19960802
AB
     CDNAs for the pollen panallergen co-factor-independent phosphoglycerate
     mutase (E.C. 5.4.2.1.) of birch, mugwort and timothy grass pollen are
     cloned and characterized. This sequence of the allergen is highly
```

AB CDNAs for the pollen panallergen co-factor-independent phosphoglycerate mutase (E.C. 5.4.2.1.) of birch, mugwort and timothy grass pollen are cloned and characterized. This sequence of the allergen is highly conserved in all plants, but not in animals. The amino acid sequence and the most important B and T cell epitopes of the mol. are derived and demonstrated. The allergen was manufd. in E. coli and bound the IgE serum of patients who are allergic to tree, grass and weed pollens and various foodstuffs. A monoclonal antibody (BIP 3) specifically binds to this protein from all plants tested. The significance of the co-factor-independent phosphoglycerate mutase (E.C. 5.4.2.1.) derives from the fact that it results in the cross-sensitization of patients. The

protein and peptide fragments can be used in diagnostic and therapeutic methods based, for example, on antigen -antibody interaction, mediator release or T-cell reactivity.

# IT 187816-25-7

RL: ADV (Adverse effect, including toxicity); BPR (Biological process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(B-cell epitope of mugwort pollen phosphoglycerate mutase isoenzyme Art17; cDNAs for plant panallergen co-factor-independent phosphoglycerate mutase and identification of diagnostic and therapeutically useful epitopes)

## IT 187816-07-5

RL: ADV (Adverse effect, including toxicity); BPR (Biological process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(B-cell epitope of mugwort pollen phosphoglycerate mutase isoenzyme Art6; cDNAs for plant panallergen co-factor-independent phosphoglycerate mutase and identification of diagnostic and therapeutically useful epitopes)

L4 ANSWER 15 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1997:116549 CAPLUS

DOCUMENT NUMBER:

126:113162

TITLE:

Anti-fungal and anti-bacterial histatin-based peptides

INVENTOR(S): Oppenheim, Frank G.; Xu, Tao; Roberts, F. Donald;

Spacciapoli, Peter; Friden, Phillip M.

PATENT ASSIGNEE(S):

Periodontix, Inc., USA; Trustees of Boston University;

Oppenheim, Frank G.; Xu, Tao; Roberts, F. Donald;

Spacciapoli, Peter; Friden, Phillip M.

SOURCE:

Ρ

PCT Int. Appl., 70 pp.

DOCUMENT TYPE:

Patent

LANGUAGE:

English

CODEN: PIXXD2

FAMILY ACC. NUM. COUNT: 7

PATENT INFORMATION:

PAT	PATENT NO.					KIND DATE					CATI		0.	DATE			
				1996 1997						4	1996	0607					
	₩:	EŞ,	FI, LU,	GB,	GE,	AZ, HU, MG,	IL,	IS,	JP	, KE,	KG,	ΚP,	KR,	ΚZ,	LK,	LR,	LS,
		IE,	IT,	LU,	MC,	SZ, NL,	PT,	SE,	BF	, BJ	CF,	CG,	CI,	CM,	GA	·	GR,
ŪA	US 5631228 AU 9661585 AU 709204				1	1996			0607 0607								
EP	P 832119 P 832119			A:	2	1998			EP 19	996-9	1918	2	1996	0607	•		
		ΙE,	FI	-	·	DK,	•	•			·	·	·	•	•	MC,	PT,
ΑT	1964 5912	75 230		E A		1999 2000 1999	1015 0615		US US US	AT 19 US 19 1995- 1991- 1993-	996-9 998-9 -4818 -7865 -1450 -2877	1918: 7355: 88 71 30 17	2 9 A B1 B1 A2	1996 1998	0607 0311 0607 1101 1028 0809		

OTHER SOURCE(S): MARPAT 126:113162

AB Histatin-based peptides representing defined portions of the amino acid sequences of naturally occurring human histatins and methods for treatment of fungal or bacterial infection are described. These histatin-based peptides represent the active anti-fungal and anti-bacterial region of naturally occurring human histatins.

IT 186258-89-9

RL: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (anti-fungal and anti-bacterial histatin-based peptides)

L4 ANSWER 16 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1996:260618 CAPLUS

DOCUMENT NUMBER: 124:314670

TITLE: A protective anti-peptide antibody against the

immunodominant site of the A24 Cruzeiro strain of foot-and-mouth disease virus and its reactivity with other subtype viruses containing the same minimum

binding sequence

AUTHOR(S): Barnett, P. V.; Pullen, L.; Staple, R. F.; Lee, L. J.;

Butcher, R.; Parkinson, D.; Doel, T. R.

CORPORATE SOURCE: Inst. Animal Health, Pirbright Lab., Pirbright,

Woking, Surrey, GU24 ONF, UK

SOURCE: J. Gen. Virol. (1996), 77(5), 1011-18

CODEN: JGVIAY; ISSN: 0022-1317

DOCUMENT TYPE: Journal LANGUAGE: English

AB A synthetic peptide vaccine of the general sequence Cys-Cys-(200-213)-Pro-Pro-Ser-(141-158)-Pro-Cys-Gly(peptide A40), where the numbered residues refer to the VP1 sequence of foot-and-mouth disease virus (FMDV) strain A24 Cruzeiro, has previously been shown to elicit neutralizing and protective antibodies in guinea-pigs and cattle. To examine this immunogenic tract in more detail monoclonal antibodies (MAbs) were raised to this peptide. One such MAb, C1.1, which recognized the homologous peptide, bound to native virus, neutralized infectivity in vitro and passively protected mice from challenge. Using overlapping dodecameric peptides the min. binding 'footprint' of this MAb incorporated residues 149-154 which were resp. Gly-Ser-Leu-Ala-Ala-Arg. Since this 'footprint' occurs in several other A subtype strains of FMDV, the extent to which MAb C1.1 could cross-react was also examd. Using a liq.-phase competition ELISA, only viruses with a sequence that encompassed the same min. binding 'footprint', namely A27 Cundinamarca Colombia/76, A Argentina/79, and A Venceslau Brazil/76 reacted with similar affinity against MAb C1.1. However, further serol. examn. of Cl.1 with these viruses by indirect ELISA, in vitro neutralization and passive protection showed clear functional disparity. In contrast to the lig.-phase ELISA, the ability of Cl.1 to react with electrostatically bound virus varied significantly depending on the subtype examd. Moreover, the capacity of this MAb to neutralize these subtypes showed wide divergence which was mirrored by the protection data.

# IT 176260-59-6 176260-60-9

RL: BPR (Biological process); PRP (Properties); BIOL (Biological study); PROC (Process)

(epitope mapping and neutralizing activity of anti-VP1 monoclonal antibody against peptide of foot-and-mouth disease virus A24 Cruzeiro)

L4 ANSWER 17 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1995:380112 CAPLUS

DOCUMENT NUMBER: 122:161381

TITLE: Preparation of peptide inhibitors of selectin binding.

INVENTOR(S): Heavner, George A.; Kruszynski, Marian

PATENT ASSIGNEE(S):

Centocor, Inc., USA

SOURCE:

PCT Int. Appl., 52 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
WO 9414836 A1 19940707 WO 1993-US12110 19931213

W: CA, JP, US

RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

US 5710123 A 19980120 US 1995-454207 19950609 PRIORITY APPLN. INFO.: US 1992-997771 19921218 WO 1993-US12110 19931213

OTHER SOURCE(S): MARPAT 122:161381

R1X1A1B1C1D1E1F1G1H1H1J1X2R2, R1X1-cyclo-(A2B1C1D1E1F1G1H1I2)-J1X2R2 (X1 = N-terminal sequence of 0-10 amino acids; R1 = H, alkyl, aryl, CHO, alkanoyl, aroyl, alkoxycarbonyl, aryloxycarbonyl; X2 = C-terminal sequence of 0-10 amino acids; R2 = OH, OR3, NR5R6; R3 = alkyl, aryl; R5, R6 = H, alkyl, aryl, cycloalkyl; A1 = null, D- or L-Cys; A2 = D- or L-Cys; B1 = Dor L-His, -Ser, -Leu, -Phe, -Asn, -Pro, -Glu; C1 = D- or L-Lys, -His, -Arg, -Ser; D1 = D- or L-Lys, -Leu, -Ala, -Phe, -His, -Arg, -Ser; E1 = Dor L-Lys, -Phe, -Gln, -Arg; F1 = D- or L-His, -Leu, -Ala, -Ile, -Thr, -Arg; G1 = D- or L-Ala, -Phe, -His, -Gln; H1 = D- or L-Leu, -Phe, -Ile, -Pro, -Ala; I1 = D- or L-Cys, -Phe, -Ile, -His, -Leu, -Val, -Thr, -Ser; I2 = D- or L-Cys; J1 = D- or L-Tyr, -Phe, -Ile, -Val), were prepd. The peptides have as their core region portions of the 109-118 amino acid sequence of P-selectin, E-selectin or L-selectin. Diagnostic and therapeutic methods are given utilizing the peptides and pharmaceutical compns. thereof. Thus, Cys-Leu-Lys-Lys-Lys-His-Ala-Leu-Cys-Tyr-NH2 was prepd. using BOC-protected amino acids on methylbenzhydrylamine resin. Title compds. inhibited binding of human neutrophils to P-selectin with IC50 = 0.003-1.013 mM.

# IT 161174-87-4P 161174-90-9P

RL: BAC (Biological activity or effector, except adverse); BUU (Biological use, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of peptide inhibitors of selectin binding)

L4 ANSWER 18 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

1994:555572 CAPLUS

DOCUMENT NUMBER:

121:155572

TITLE:

Experimental autoimmune panencephalitis and uveoretinitis transferred to the Lewis rat by T lymphocytes specific for the S100.beta. molecule, a calcium binding protein of astroglia

AUTHOR(S):

Kojima, Kimikazu; Berger, Thomas; Lassmann, Hans; Hinze-Selch, Dunja; Zhang, Yiping; Gehrmann, Jochen;

Reske, Konrad; Wekerle, Hartmut; Linington,

Christopher

CORPORATE SOURCE:

Dep. Neuroimmunol., Max-Planck Inst. Psychiatr.,

Martinsried, 82152, Germany

SOURCE:

J. Exp. Med. (1994), 180(3), 817-29

CODEN: JEMEAV; ISSN: 0022-1007

DOCUMENT TYPE:

Journal

LANGUAGE:

English

AB The pathogenic potential of autoimmune T cell responses to nonmyelin autoantigens was investigated in the Lewis rat using the astrocyte-derived calcium binding protein S100.beta., as a model nonmyelin autoantigen. The

Lewis rat mounts a vigorous RT1B (major histocompatibility complex class II) restricted autoimmune response to an immunodominant S100.beta. epitope (amino acid residues 76-91). The adoptive transfer of S100.beta.-specific T cell lines induced a severe inflammatory response in the nervous system, but only minimal neurol. dysfunction in naive syngeneic recipients. The inability of S100.beta.-specific T cell transfer to induce severe disease was assocd. with a decreased recruitment of ED1+ macrophages into the central nervous system (CNS) in comparison with that seen in severe exptl. autoimmune encephalomyelitis (EAE) induced by the adoptive transfer of myelin basic protein (MBP)-specific T line cells. Moreover, unlike encephalitogenic MBP-specific T lines, S100.beta.-specific T cell lines exhibited no cytotoxic activity in vitro. Histopathol. anal. also revealed striking differences in the distribution of inflammatory lesions in MBP- and S100.beta.-specific T cell-mediated disease. In contrast to the MBP paradigm, S100.beta.-specific T cell transfer induces intense inflammation not only in the spinal cord, but throughout the entire CNS and also in the uvea and retina of the eye. In view of the distribution of lesions throughout the gray and white matter of the CNS the authors propose to term this new model exptl. autoimmune panencephalomyelitis (EAP) to differentiate at from EAE. These expts. demonstrate for the first time that nonmyelin CNS autoantigens can initiate a pathogenic autoimmune T cell response, although the nature of the target autoantigen profoundly influences the clin. and histopathol. characteristics of the resulting autoimmune disease. This is not simply a consequence of the distribution of the autoantigen, as both MBP and S100.beta. are coexpressed in many areas of the CNS, but reflects differences in the capacity of different regions of the CNS to process and present autoantigens. This new model of T cell-mediated autoimmune CNS disease exhibits a no. of similarities to multiple sclerosis (MS), such as its mild clin. course and the involvement of areas of the brain and eye, which are absent in myelin-mediated models of EAE. Nonmyelin autoantigens may therefore play an unexpectedly important role in the immunopathogenesis of inflammatory diseases of the CNS.

ΙT 157566-35-3

RL: BIOL (Biological study)

(in epitope mapping for nonmyelin autoantigen S100.beta., autoimmune panencephalitis and uveoretinitis in relation to)

L4ANSWER 19 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:

1992:658207 CAPLUS

DOCUMENT NUMBER:

117:258207

TITLE: INVENTOR(S): Antiasthmatic compositions containing peptides Nishimoto, Ikuo; Okamoto, Taku; Okuni, Yoshihiro

PATENT ASSIGNEE(S):

SOURCE:

Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
~				
JP 04164036	. A2	19920609	JP 1990-285748	19901025

AΒ Antiasthmatic compns. contain peptides having basic amino acids (arginine, lysine, and histidine) at the N-terminal 1st and 2nd positions and the C-terminal last position and the 3rd or 4th positions therefrom. example, 9 peptides are presented, but no pharmacol. data given.

IT 144776-40-9 144776-41-0 144776-43-2

RL: BIOL (Biological study)

(as antiasthmatic)

ANSWER 20 OF 25 CAPLUS COPYRIGHT 2001 ACS ACCESSION NUMBER:

DOCUMENT NUMBER:

1989:534755 CAPLUS

TITLE:

Preparation of decapeptides as LHRH antagonists having

high antiovulatory activity and negligible histamine

releasing activity

INVENTOR(S):

Folkers, Karl; Bowers, Cyril Y.; Ljungquist, Anders; Tang, Pui Fun Louisa; Kobota, Minoru; Feng, Dong Mei

PATENT ASSIGNEE(S): University of Texas System, USA

111:134755

SOURCE:

PCT Int. Appl., 70 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

	PAT	TENT	NO.		KIND DATE					A	PPLI	CATI	ON N	ο.	DATE						
	WO	8901	944		A1 19890309					W	0 19	88-U	S292	2	19880824						
		W: AT, AU,																LU,			
							NO,														
		RW:					CG,	CH,	CM,	DE,	FR,	GA,	GB,	ΙT,	LU,	ML,	MR,	NL,			
				SN,																	
		4935									S 19	87-8	8431		1987	0824					
		8825								Αl	U 19	88-2	5294		1988	0824					
	ΑU	6192	21		В	2	1992	0123													
	EΡ	3776	65		Α	1	1990	0718		E	P 19	88-9	0878	6	19880824						
	ΕP	3776	65		В	1	1995	0712													
		R:	ΑT,	BE,	CH,	DE,	FR,	GB,	IT,	LI,	LU,	NL,	SE								
	JΡ	0350	1969		Т	2	1991	0509		J.	P 19	88-5	0798	2	1988	0824					
	HU	5994	0		A	2	1992	0728		н	U 19	88-5	868		1988	0824					
	HU	2130	98		В		1997														
		1339					1998	0203		CZ	A 19	88-5	8736	4	1988	1230					
•		9000					1990								1990						
	NO	9000 9402	179		Δ		1990	1423		No	19	94-2	179		1994	0610					
PRIO																					
11(10)	PRIORITY APPLN. INFO																				
										WO 1988-US2922 NO 1990-888											
				_		_			_ 1	NO T	J J U =	000			1990	0223					

AB Decapeptide analogs of LHRH, e.g. [N-Ac-D-2-Nall, D-pClPhe2, D-3-Pal3, NicLys5, D-NicLys6, Ilys8, D-Ala10]-LHRH [2-Nal = 3-(2-naphthyl)alanine, pClPhe = 3-(4-chloro)phenylalanine, 3-Pal = 3-(3-pyridyl)alanine, NicLys = N.epsilon.-nisotinoyllysine, Ilys = N.epsilon.-isopropyllysine] (I) (Antide) having high ovulation inhibition activity and very low histamine release activity, were prepd. I and other decapeptides were synthesized by the solid phase method using a Beckman Model 990 peptide synthesizer, new lysine, ornithine, alanine, glutamic acid and arginine derivs., and benzhydrylamine hydrochloride resin as a solid support. I showed antiovulatory activity (AOA) of 100% at 1 .mu.g and 36% at 0.5 .mu.g in rats and an ED50 of .gtoreq.300 .mu.g/mL for histamine release in a rat mast cell assay.

### IT 112424-93-8P

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of, as LHRH antagonist)

ANSWER 21 OF 25 CAPLUS COPYRIGHT 2001 ACS ACCESSION NUMBER: 1989:455372 CAPLUS

DOCUMENT NUMBER:

TITLE:

111:55372 Neutralizing epitopes of type O foot-and-mouth disease virus. II. Mapping three conformational sites with

synthetic peptide reagents

AUTHOR(S): Parry, N. R.; Barnett, P. V.; Ouldridge, E. J.;

Rowlands, D. J.; Brown, F.

Dep. Virol., Wellcome Biotechnol. Ltd., CORPORATE SOURCE:

Beckenham/Kent, BR3 3BS, UK

SOURCE: J. Gen. Virol. (1989), 70(6), 1493-503

CODEN: JGVIAY; ISSN: 0022-1317

DOCUMENT TYPE: Journal LANGUAGE: English

Four neutralizing monoclonal antibodies (MAbs), recognizing 3 functionally independent, conformational sites on type O foot-and-mouth disease virus (FMDV) failed to react with immobilized structural proteins or synthetic peptides but bound to the isolated capsid protein VP1 and peptides in Inhibition ELISA techniques were, therefore, applied using peptide antigens and anti-peptide sera to block MAb binding to virus particles, permitting the identification of those portions of the VP1 protein contributing to the epitopes. The binding site of one MAb, which neutralized a range of type O FMDV isolates, was shown to have components within regions 146-150 and 200-213 of VP1 with a crit. involvement of the amino acids at positions 146 and 206 or 207. The determinants recognized by 2 other MAbs which were directed at similar, but not identical, epitopes from a second site included components from the 200 to 213 and 143 to 146 regions with amino acids 143 and 144, resp., being crit. for the inhibition of the virus binding of the 2 antibodies. Thus, the 2 previously identified immunogenic tracts of VP1 are brought into proximity in the quaternary structure of the virion to form an antigenic domain contg. several conformational epitopes, some of which are functionally independent. A fourth, strain-specific MAb was effectively blocked from reacting with virus by peptides corresponding to residues 161-180 and 200-213.

121795-39-9 ΙT

RL: PROC (Process)

(monoclonal antibody recognition of, of foot-and-mouth disease virus VP1 protein)

ANSWER 22 OF 25 CAPLUS COPYRIGHT 2001 ACS L4

ACCESSION NUMBER: 1988:433575 CAPLUS

DOCUMENT NUMBER: 109:33575

TITLE: Comparison of benzo[a]pyrene-diol-epoxide binding to

histone H2A with different carboxy-terminal regions

AUTHOR(S): Kurokawa, Masahiko; MacLeod, Michael C.

CORPORATE SOURCE: Syst. Cancer Cent., Univ. Texas, Smithville, TX, USA

SOURCE: Carcinogenesis (London) (1988), 9(3), 419-25

CODEN: CRNGDP; ISSN: 0143-3334

DOCUMENT TYPE: Journal

English LANGUAGE:

(.+-.)-7r, 8t-Dihydroxy-9t, 10t-oxy-7, 8t-Dihydroxy-9t, 10t-oxy-7, 10t-(DPBE-I) binding was compared in 3 vertebrate histones H2A with different C-terminal regions. HPLC analyses of core histones prepd. from nuclei exposed to [3H]BPDE-I showed that rat liver and chicken erythrocyte histones H2A were heavily labeled by [3H]BPDE-I, but Xenopus laevis liver histone H2A was not. This result was confirmed by HPLC analyses of V8-protease digests of BPDE-I bound to histone H2A purified from the 3 different nuclei. There are significant amino acid sequence differences only in the C-terminal regions of the different histones H2A, where rat liver and chicken erythrocyte histones H2A contain 2 and 1 histidine residues, resp., while the amino acid sequence of Xenopus histone H2A contains no histidine. Pre-treatment of the in situ BPDE-I-modified H2A.2 from rat liver with carboxypeptidase B, which should remove the C-terminal lysine from the protein, resulted in increased retention times on reverse-phase HPLC for the adduct-contg. peptides upon subsequent

V8-protease digestion. This suggested that the site(s) of BPDE-I modification are located primarily in the C-terminal octapeptide of rat H2A.2. To confirm this, C-terminal V8-peptides of the different histones H2A were isolated and reacted with BPDE-I at physiol. pH in vitro. The HPLC analyses of the reaction mixts. indicated that the C-terminal peptide of rat liver and chicken erythrocyte histones H2A was a target site for BPDE-I binding in nuclei. Thus, the nucleophilic target amino acid for BPDE-I binding in histone H2A may be a histidine located close to the C terminus.

IT 115154-41-1 115154-42-2

RL: BIOL (Biological study)

(of C-terminal of histone H2A, benzopyrene diol epoxide binding in relation to, species differences in)

ANSWER 23 OF 25 CAPLUS COPYRIGHT 2001 ACS L4

ACCESSION NUMBER: 1988:49436 CAPLUS

DOCUMENT NUMBER: 108:49436

TITLE: Design, synthesis and bioassays of antagonists of

LH-RH which have high antiovulatory activity and

release negligible histamine

Ljungqvist, Anders; Feng, Dong Mei; Tang, Pui Fun AUTHOR(S):

Louisa; Kubota, Minoru; Okamoto, Tadashi; Zhang, Yawen; Bowers, Cyril Y.; Hook, William A.; Folkers,

Karl

CORPORATE SOURCE: Inst. Biomed. Res., Univ. Texas, Austin, TX, 78712,

USA

SOURCE: Biochem. Biophys. Res. Commun. (1987), 148(2), 849-56

CODEN: BBRCA9; ISSN: 0006-291X

DOCUMENT TYPE: Journal

English LANGUAGE:

Potent antagonists of LH-RH were achieved which release negligible histamine. [N-Ac-D-2-Nal1, D-pClPhe2, D-3-Pal3, NicLys5, D-NicLys6, ILys8, D-Ala10]-LHRH (2-Nal = 3-(2-naphthylalanine; 3-Pal = 3-(3-pyridylalanine);NicLys = N.epsilon.-nicotinoyllysine; ILys = N.epsilon.-isopropyllysine) showed 100% antiovulatory activity (AOA)/1 .mu.g and 36% AOA/0.5 .mu.g; the ED50 for histamine release was >300 .mu.g/mL. [N-Ac-D-2-Nall,DpClPhe2, D-3-Pal3, PicLys5, D-PicLys6, ILys8, D-Ala10]-LHRH (PicLys = N.epsilon.-picoloyllysine) showed 100% AOA/0.5 .mu.g, 40% AOA/0.25 .mu.g, and an ED50 for histamine release of 93 .mu.g/mL; it was the most potent of 52 new peptides. These antagonists feature designs with weakly basic acylated D-Lys6 (D-NicLys6 and D-PicLys6), alkylated Lys8 or Orn8 (ILys8 and IOrn8 (N.delta.-isopropylornithine)), NicLys5, and PicLys5. Concepts included balanced overall basicity, superiority of ILys8 and IOrn8 which are sequence dependent, and sensitivity of positions 5 and 6 for potency.

IT 112424-93-8

> RL: BIOL (Biological study) (ovulation inhibition by, with negligible histamine release, mol. structure in relation to)

ANSWER 24 OF 25 CAPLUS COPYRIGHT 2001 ACS L4

ACCESSION NUMBER: 1985:465120 CAPLUS

DOCUMENT NUMBER: 103:65120

TITLE:

Products from catabolism of proteins as analogs of

peptide bioregulators (structural factors of the

physiological activity)

AUTHOR(S): Leonova, V. I.; Tseitlin, V. M.; Galaktionov, S. G.;

Nikolaichik, V. V.

CORPORATE SOURCE: Opornyi Punkt, VNII Genet. Sel. Prom. Mikroorg.,

Minsk, USSR

SOURCE: Konform. Funkts. Biol. Mol. (1984), 73-81. Chipens, G. I. Zinatne: Riga, USSR.

CODEN: 53VVAG

DOCUMENT TYPE: LANGUAGE:

Conference Russian

The presence of sequences of peptide bioregulators fragments in blood proteins and their potential release following degrdn. of the proteins by enzymes present in circulating blood were discussed. E.g., the tuftsin analog His,Lys,Pro [97461-89-7] was found in fragment 535-538 of serum albumin and could be released by plasmin. The enkephalin analog Tyr-Gly-Gly-Phe-Tyr [97461-90-0] could be released from the .beta.-chain of fibrinogen by plasmin, esterase, and exopeptidase. The angiotensin analogs Glu-Glys-Ile-Tyr-Ile-His-Pro-Arg [97474-91-4] and Glu-Lys-Ile-Tyr-Ile-His-Pro-Arg-Tyr [97461-88-6] were released from fragments 405-412 and 405-413 of prothrombin [9001-26-7]. The stabilities of the conformational analogs of these bioregulator peptides were given and related to potential bioacty.

IT 97461-89-7

RL: BIOL (Biological study)

(release from serum albumin and stability of)

L4 ANSWER 25 OF 25 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1985:94015 CAPLUS

DOCUMENT NUMBER: 102:94015

TITLE: Use of peptide synthesis to probe viral antigens for

epitopes to a resolution of a single amino acid

AUTHOR(S): Geysen, H. Mario; Meloen, Rob H.; Barteling, Simon J.

CORPORATE SOURCE: Commonw. Serum Lab., Parkville, 3052, Australia

SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1984), 81(13),

3998-4002

CODEN: PNASA6; ISSN: 0027-8424

DOCUMENT TYPE: Journal LANGUAGE: English

AΒ A procedure is described for rapid concurrent synthesis on solid supports of hundreds of peptides, of sufficient purity to react in an ELISA. Interaction of synthesized peptides with antibodies is then easily detected without removing them from the support. In this manner, an immunogenic epitope of the immunol. important coat protein of foot-and-mouth disease virus (type O1) was located with a resoln. of 7 amino acids, corresponding to amino acids 146-152 of that protein. Then, a complete replacement set of peptides in which all 20 amino acids were substituted in turn at every position within the epitope was synthesized, and the particular amino acids conferring specificity for the reaction with antibody were detd. The leucine residues at positions 148 and 151 were essential for reaction with antisera raised against intact virus. lesser contribution was derived from the glutamine and alanine residues at positions 149 and 152, resp. Aside from the practical significance for locating and examg. epitopes at high resoln., these findings may lead to better understanding of the basis of antigen-antibody interaction and antibody specificity.

IT 92227-36-6DP, polymer-bound 92269-39-1DP, polymer-bound 92269-40-4DP, polymer-bound

RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study); PREP (Preparation)

(prepn. and antigenicity of)

FILE 'HOME' ENTERED AT 08:55:24 ON 06 JUL 2001

```
RESULT
Q9W4C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Q9FH30
  B B B B
                                                                                    밁
                                                                                                      δÃ
                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
 Q9W4C1;
Q9W4C1;
01-MAY-2000
01-MAY-2000
                                                                                                                                                                     Clones.;
Clones.;
DNA Res. 7:131-135(2000).
EMBL; AB022215; BAB17274.1;
EMBL; AB022215; BAB17274.1;
                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2001
01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Sy
Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                      GB | AAF34232
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9FH30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9FH30
                                                                                                                                                                                                                                                    STRAIN=COLUMBIA;
MEDLINE=20277480;
                                                                                                                                                                                                                                                                                              Submitted
                                                                                                                                                                                                                                                                                                         Sato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gil B., Pastoriza E.M., Ballester A., Sanchez C.; "Identification of a phase-change related mRM in oak shoot cultures derived from basal sprouts and crown branches."; Submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouercus robur (English oak).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
Fagales; Fagaceae; Quercus.
                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                   STRAIN-COLUMBIA;
                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (Mouse-ear cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AJ271778; CAB72442.1;
                                                                                   128
                                                                                                                                                                                                                         reatures
                                                                                                                                                                                                                                 Structura.
                                                                                                                                                                                                                                              Nakamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-IN VITRO SHOOT CULTURES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=38942;
                                                                                                                           Local Similarity hes 8; Conserv
                                                    14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              54 НСНСНСННСКРС 65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                       2 HGHGHGKHKNKGKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                         s.
                                                                                   HEHGHSPHKHDGKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HGHGHGKHKNKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
8; Conserv
                                                                                                                                                                                                                         of.
                                                                                                                                                                                                                                                                                                        Nakamura Y.,
                                                                                                                                                                                                                                                                                              (JAN-1999)
                                                                                                                                                                                                                      l analysis of f the regions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
  (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. (TrEMBLrel.
                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel.
                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AΑ;
                                                                                                                                                                                                                                                      PubMed=10819329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8414 MW;
                                                                                                        15
                                                                                   141
                                                                                                                                     53.1%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               53.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                              ç
                                                                                                                                                                                                                                                                                                        Kaneko
                                                                                                                                                                                                                                                                                                                                                                                                                16,
16,
 13,
13,
                                                                                                                                                                                                                      Arabidopsis thal of 4,504,864 bp
                                                                                                                                                                                                                                                                                              the
                                                                                                                                                                               MW;
Created)
Last sequence update)
                                                                                                                                                                                                                                                                                            o T., Kato T., Asamizu E., Tabata EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                           Score 52; DB Pred. No. 1.9; 2; Mismatches
                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 52;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
8E45CABF40F00B6F CRC64;
                               PRT;
                                                                                                                                                                               86C21350D8DB3089 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                      thaliana chromosome 3. I. Sequence 4 bp covered by sixty P1 and TAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
ω
ω
                               554 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                   DB
1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 10; Length 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą
                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                               Length 333;
                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                      Spermatophyta;
e; eurosids II;
                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
Q9VHR3
ID Q9
AC Q9
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Merkulov G., Milshina N.V., Mobarry C., McLeod M.P., McPherson D., RA Morkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., RA Molson D.R., Nelson K.A., Nixon K., Muzny D.M., Nelson D.L., RA Nelson D.R., Politman G.S., Pan S., Nusskern D.R., Pacleb J.M., Ra Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H., RA Shue B.C., Siden Kiamos I., Simpson M., Skupski M.P., Smith T., RA Shue B.C., Siden Kiamos I., Simpson M., Skupski M.P., Smith T., RA Shue B.C., Siden Kiamos I., Simpson M., Skupski M.P., Smith T., RA Shish B.C., Widen Kiamos I., Stapleton M., Skupski M.P., Smith T., RA Shish B.C., Widen Kiamos I., Weinstock G.M., Weinstock G.M., Wang X., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A., RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A., RA Zheng X.H., Zhong F.N., Zhong M., Zhou X., Zhu X., Smith H.O., RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O., RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O., RA Zheng X., Myers E.W., Rubin G.M., Venter J.C.; "The genome sequence of Drosophila melanogaster."; EMBL, AE003434, AAR40351.].

DR EMBL, AE003434, AAR40351.].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Abril J.F., Agbayani A., An H.-J., Andrews-pfannkoch C., Baldwin D.,
RA Abril J.F., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Becson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Gherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Gherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dourbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Llu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C. Morrie T. Morries T.
                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                            Query Match
Best Local s
Matches 9
Q9VHR3;
01-MAY-2000
01-MAY-2000
01-MAY-2000
                                                                                                 Q9VHR3
                                                                                                                                                                                                                                                                                                                                                                                                                                          Interpro; IPRUUZZZZZ,
INTERPRO 1970 PRINTS; PRO0334; KININOGEN.
554 AA; 62329 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera; Musc Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-JUN-2000 (TrEMBLrel. CG15784 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CG15784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7227;
                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                            μ.
                                                                                                                                                   15
                                                                                                                                                                                                                             KHGHGPHHHGRHGHHGR
                                                                                                                                                                                                                                                                            KHGHG---HGKHKNKGK 14
                                                                                                                                                                                                                                                                                                                              similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                    PRELIMINARY,
                                                                                                                                                                                                                                                                                                                                                      52.6%;
52.9%;
                                                                                                                                                                                                                             217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last annotation update)
                                                                                                                                                                                                                                                                                                                                                   Score 51.5; D
Pred. No. 3.7;
                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       9CE2F80A7A1D902D CRC64;
                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                    819
                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                              DΒ
                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                           Length 554;
                                                                                                                                                                                                                                                                                                                            ω
••
                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H.O.,
                                                                                                                                                                                                                                                                                                                            ۲
```

(TrEMBLrel. (TrEMBLrel. (TrEMBLrel.

13, 13,

Created)
Last sequence update)
Last annotation update)

```
RESULT
Q9U412
ID Q9
AC Q9
DT Q
멍
                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SQ PRI RA
                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                    Q9VYJ9;
01-MAY-2000
01-MAY-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9U4I2;
                                                                                                                                                                                                                                                                                                                                   1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-99417957; PubMed=10488333;
Tsai C.-C., Kao H.-Y., Yao T.-P., McKeown M., Evans R.M.;
Tsai C.-C., Kao H.-Y., Yao T.-P., McKeown M., Evans R.M.;
"SMRTER, a Drosophila nuclear receptor coregulator, reveals that
mediated repression is critical for development.";
mediated repression is critical for development.";
Mcl. Cell 4:175-186(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ye J. Yeh R.-F. Zaveri J.S. Zhan M. Zhang G., Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C., "The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(200).
EMBL; AE003454; AAF46744.1; -
ETJBase; FBgn0034645; CG10320.
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                            SMR OR CG4013.
                                                                                                                                                                                                               094479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00249; myb_DNA-binding; 1.
PRINTS; PR00308; ANTIFEEEEEI.
PROSITE; PS000687; ALDEHYDE_DEHYDR_GLU; UNKNOWN_1.
SMART; SM00395; SANT; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SANT DOMAIN PROTEIN SMRTER. SMR OR SMRTER OR CG4013.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pterygota; Neoptera; Endopterygota; Diptera; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FlyBase; FBgn0024308; Smr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AF175223; AAD52614.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [nterPro; IPR002086;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97
                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 HGHGHGKHKNKG
                                                                                               PROTEIN
                                                                                                                                                                                                                                                                                                                                                           HGHGHGKHKN 11
                                                                                                                                                                                                                                                                                                                                   HGHGHGGHAN 1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HGHGHEEHGDKG 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR001005; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR000104;
                                                                                                                  (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12091 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                               54.1%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            364115 MW;
                                                                                                                    13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            13,
16,
                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                    Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47552EC0EC5E9D76 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6284E14C5C247CD9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                               No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53;
No.
                                                                                                                                                                                                            3502 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhang G., Zhao
X., Zhu S., Zhu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>ن</u>
                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                         2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3469;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ×Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zheng
Smith
                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
RESULT
Q9M435
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 9H
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                               Query Match
Best Local
               Q9M435;
Q9M435;
01-OCT-2000
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                     1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bushakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Burtis K.C., Busam D.A., Butler H., Caddeu E., Center A., Chandra I., Changra T., Chandra I., Changra T., Cha
                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00249; myb_DNA-binding; 1.
PRINTS; PR00308; ANTIFREEZEI.
PROSITE; PS00687; ALDEHYDE_DEHYDR_GLU;
                                                                                                                                                                                                                                                                                                                                                         SMART; SM00395;
SEQUENCE 3502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FlyBase; FBgn0024308; Smr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AE003490; AAF48196.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002086;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                         2 HGHGHGKHKN 11
                                                                                                                                                                                     HGHGHGGHAN 1938
                                                                                                                                                                                                                                                            8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR001005; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR000104; -.
                                                                                                                                                                                                                                                              Conservative
               (TrEMBLrel. 15, (TrEMBLrel. 15,
                                                     (TrEMBLrel.
                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                          SANT;
                                                                                                                                                                                                                                                                                   54
80
                                                                                                                                                                                                                                                                                                                                                         369068 MW;
                                                                                                                                                                                                                                                                               .1%;
                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                              0;
                                                     Created)
                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                          PRT;
                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                         74C8004F9DA8F8D9 CRC64;
                                                                                                                                                                                                                                                                               No.
                                                                                                                                                                                                                                                                             ДВ
13;
                                                                                          79
                                                                                          Ã
                                                                                                                                                                                                                                                                                                 Length 3502
                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                              0
```

```
RESULT
Q9W4J1
ID Q9
                               DOTTO 
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dubw I., Dietz S.M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Helman T.J., Wei M.-H., Ibegwam C.,
RA Harris N.L., Harvey D., Helman T.J., Wei M.-H., Ibegwam C.,
RA Liu X., Mattei B., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McDeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Ra Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Stupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Stupski M.P., Smith T.,
RA Wilshas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wilshas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Milshina M., Stong G., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Rubin G.M., Venter J.C.,
RA Zheng X.H., Zhong F.N., Rubin G.M., Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SORRER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Brandon R.C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Mann K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D., Baldwin D., Baldwin B., B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00006; zf-C2H2; 12.
Pfam; PF000048; ZINCFINGER.
PROSITE; PR00048; ZINC_FINGER_C2H2; 11.
SMART; SM00355; ZnE_C2H2; 1.
DNA-binding; Metal-binding; Nuclear protein; Zinc-SEQUENCE 1891 AA; 205368 MW; 9E882364C36BB9BF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Drosophila melanogaster (Fruit 1
Eukaryota; Metazoa; Arthropoda;
Pterygota; Neoptera; Endopterygo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9W4J1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9W4J1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
nes 8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 HGHGHGKHKNKG 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROTEIN.
OR EG:66A1.1 OR CG12212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGHGHGSHGSHG 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR000822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arthropoda; Tracheata; Hexapoda; Insecta;
Endopterygota; Diptera; Brachycera; Muscomorpha;
ilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             66
55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zinc-finger
BB9BF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1891;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
```

```
ACCOMPANDA 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SQ DR DR RT
RA Amanatides P.G., Scherer S.E., Li P. M., Hoskins R.A., Galle R.F., RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., RA Sutton G.G., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., RA Brandon R.C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., RA Borther R.A., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., RA Bortkova D., Botchan M.R., Bouck J., Brokstein P., Bottier P., Cadieu E., Center A., Chandra I., Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., Davies R., Dongo F., Correll J.H., Guz, Gelbart W.M., Glasser K., RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K., RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J., RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J., RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J., RA Harris N.L., Karjen G.H., Wei M.-H., Ibegwam C., Laid Z., Kulp D., Lai Z., Kulp D., Laing Y., Lin X., RA Merson D.R., McIson N.A., Kulpan J., Kulpan J., Ketchum K.A., Kakalin J., Kulpan J., Kulpan J., Kulpan J., Kul
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9W2E8;
Q9W2E8;
01-MAY-2000
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda;

Pterygota; Neoptera; Endopterygota; Diptera; Brachyce

Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FlyBase; FBgn0003053; peb.
InterPro; IR000822; -
Pfam; PF00096; zf-C2H2; 12.
PROSITE; PS00028; ZINC_FINGER_C2H2;
SMART; SM00355; ZnF_C2H2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CG10320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CG10320 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA-binding; Mecc.
1893 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AE003431; AAI
HSSP; P08046; 1A1I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 HGHGHGKHKNKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGHGSHGSHG 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Celniker S.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Metal-binding; Zinc
893 AA; 205673 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAF45960.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Holt R.A., Evans C.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zinc-finger:
MW; 1B223EE96468A754 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 54;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gocayne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

FI

```
RESULT
Q9P6B0
                δÃ
밁
                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                       Qy
                                     Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              027920;
01-NOV-1996
01-NOV-1996
01-NOV-1998
                                                                                    German Neurospora genome project;
Submitted (MAY-2000) to the EMBL/
EMBL; AL355927; CAB91259.1; -.
Hypothetical protein.
SEQUENCE 125 AA; 13315 MW; BB
                                                                                                                                                                                                                                                    Q9P6B0 PRELIMINARY; PRT Q9P6B0; Q1-OCT-2000 (TrembLrel. 15, Creat O1-OCT-2000 (TrembLrel. 15, Last O1-OCT-2000 (TrembLrel. 15, Last NEPOTHETICAL 13.3 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U13883; AAA83554.1; -.
EMBL; U13892; AAA83555.1; -.
SEOUENCE 450 AA; 47185 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Baron B., Buttin G., Paco-Larson M.L.;
"Molecular characterization of an 18 kb
Bradysia hygida (Diptera, sciaridae).";
Chromosoma 103:715-724(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PC4-1
                                                                                                                                                                         [1]
SEQUENCE FROM N.A.
Aign V.,
                                                                                                                                                                                                     Eukaryota; Fungi; Ascomycota;
Sordariales; Sordariaceae; Neu
NCBI_TaxID=5141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
TISSUE=SALIVARY GLAND;
MEDLINE=95393845; PubMed=7664619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; /
Pterygota; Neoptera;
Sciaridae; Bradysia.
                                                                                                                                                                 Schulte U., Aign V.
Nyakatura G., Mewes
                                                                                                                                                                                                                                  Neurospora crassa.
                                                                                                                                                                                                                                             B1D1.100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q27920
                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                        Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Monesi N., Fernandez M.A., Fontes A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=35572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bradysia hygida
74
                                                                                                                                                                                                                                                                                                                                                      87
                  2
                                                                                                                                                                                                                                                                                                                                                                       2 HGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
          HGHGHG-KHKNKGKK 15
                                                                                                                                                                                                                                                                                                                                                      HGHGHGNNHHGGRKH 101
                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                           8; Conservative
                                                                                                                                                        (MAY-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel.) (TrEMBLrel.)
                                      Conservative
                                                                                                                                                                                                                                              BLrel. 15, Last sequence update)
(BLrel. 15, Last annotation update)
(BLR)
                                                                                                                                                                  Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arthropoda;
                                              55.6%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                     56.1%;
53.3%;
                                                                                                                                                       to the
                                                                                                                                                                          Hoheisel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Endopterygota;
                                                                                                                                                                  Έ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01,
10,
10,
                                                                                                                                                                isel J., Brandt P.,
Mannhaupt G.;
                                                                                                                                                                                                               ta; Pezizomycotina; Sordariomycetes;
Neurospora.
                                                                                                                                                       EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
                                     0
                                     Score 54.5; I
Pred. No. 0.3;
0; Mismatches
                                                                                                                 EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                     Pred.
                                                                                                                                                                                                                                                                                                      PRT;
                                                                                      BB0879A8491FDBD7
                                                                                                                                                                                                                                                                                                                                                                                                                                          1F0633CE9B7F964C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                    No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Diptera;
                                                                                                                                                                                                                                                                                                      125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      450
                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                              DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         segment of DNA puff C4 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Basso
                                               ω.
                                                                                                                                                                                                                                                                                                     ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ä
                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                              5.
                                                                                                                                                                                                                                                               update)
                                                       ω
''
                                                                                                                                                                           Fartmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nematocera;
                                                                                                                 databases
                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                           ω,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L.R.,
                                                                                                                                                                                                                                                                                                                                                                                                            Length 450;
                                                                                      CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                       Length 125;
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nakanishi
                                                                                                                                                                          B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sciaroidea;
                                                                                                                                                                           Holland
                                     μ,
                                                                                                                                                                                                                                                                                                                                                                                           0,
                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                           ₽.
                                    <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
RESULTION OF THE PROPERTY OF T
RESULT
O77275
ID
O77275
ID
O77275
O7
AC
O7
AC
O7
AC
O7
DT
O1
DT
O2
EE
EE
COC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9U229 PRELIMINARY;
Q9U229;
01-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
01-MAR-2001 (TrEMBLrel. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEB OR EG:66A1.1 OR CG12212.
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 077275
077275;
                                -!- SUBCELLULAR LOCATION: NUCLE-!- SIMILARITY: BELONGS TO THE EMBL; AL031227; CAA20227.1; -.
                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.

Ferraz C., Vidal S., Brun C., Bucheton A., Demaille J.G.;

Fegraz C., Vidal S., Brun C., Bucheton A., Demaille J.G.;

"Sequencing the distal X chromosome of Drosophila melanogaster.";

Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EG:66A1.1 PROTEIN
PEB OR EG:66A1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1998 (TrEMBLrel.
01-NOV-1998 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            investigating biology.",
Science 282:2012-2018(1998).
-!- COFACTOR: FAD (BY SIMILARITY)
-!- SIMILARITY: TO PYRIDINE NUCLEOTIDE-DISULPHIDE
                                                                                                                                   Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00368; FADPNR.
PRINTS; PR00411; PNDRDTASEI.
FAD; Flavoprotein; Oxidoredue
SEQUENCE 643 AA; 71257 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001327; Pfam; PF00070; pyr_r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AL132860; CAB60511.1; InterPro; IPR001100; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Nemata
Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       none;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Y56A3A.32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Y56A3A.32 PROTEIN
                                                                                                                                                                           Benos P.;
                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matthews
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 HGHGHGKHKNK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASS-I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HGHGHAKHSKK 116
P08046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence of the nematode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲
                                                                                                                                       (OCT-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (JAN-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pyr_redox; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oxidoreductase; Redox-active center 71257 MW; EAC5A54980A5F75D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nematoda;
                                                                                                                                   to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ťo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13,
16,
                                                                                                       ne EMBL/GenBank/DDBJ databases NUCLEAR (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   oda; Chromadorea; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 54; DB 5; Pred. No. 1.8; D; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                       NUCLEAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    elegans:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  643
                                                                       HORMONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rhabditida; Rhabditoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A platform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \omega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 643;
                                                                       RECEPTORS FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OXIDOREDUCTASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
DAG
                                                                           OSMA60
                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                            RA Addams N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addams N.D., Celniker S.E., Holt R.A., Sabburner M., Henderson S.N.,
RA Addams N.D., Celniker S.E., Holt R.A., Sabburner M., Henderson S.N.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Borkova D., Botchen M.R., Bouck J., Broksteein P., Brottler P.,
RA Borkova D., Botchen A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Charry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Glodek A., Gong F., Gorrell J.-H., Gu Z., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.-H., Gu Z., Geabart W.M., Glasser K.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Kravy B., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Kraft C., Kravytz S., Kulp D., Lai Z.,
RA Kinmel B.E., Kodira C.D., Kraft C., Kravytz S., Kulp D., Lai Z.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina S., Sanders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Santh T.,
RA Sylrakas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Hostin D., Moshref J., Rabin G.M., Venter F., Shen H.,
RA Williams S., Wartsigold H., Wang S., Appelson
                                                                                              RESULT
                                                                                                                                                밁
                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       O9VK49;
01-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
CG16800 PROTEIN.
   Q9VWS0;
Q9VWS0;
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                         EMBL; AE003638; AAF53230.1; -. FlyBase; FBgn0032462; CG16800. SEQUENCE 255 AA; 29296 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                64
                                                                                                                                                                                                                    Local Similarity
nes 9; Conserv
                                                                                                                                                                                1 KHGHGHGKHKNKGKK 15
                                                                                                                                                KKGHKHGEHSEKGEK
   (TrEMBLrel.
                                                      PRELIMINARY;
                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophilidae;
                                                                                                                                                                                                                                   57.1%;
                                                                                                                                                78
   13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation update)
Created)
Last sequence update)
                                                                                                                                                                                                                  Score 56; DB
Pred. No. 0.36
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila.
                                                                                                                                                                                                                    2;
                                                        PRT;
                                                                                                                                                                                                                                                                                                           A52DF0CCD0F414DC CRC64;
                                                        686 AA
                                                                                                                                                                                                                                     DB 5;
0.36;
                                                                                                                                                                                                                                                    Length 255;
                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ketchum K.A.,
Lai Z.,
                                                                                                                                                                                                                0;
                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                0;
```

```
RA Adams M.D. (Calniker S.E., Holt R.A., Evans C.A., Gocayne J.D., RA Adams M.D., Calniker S.E., Holt R.A., Sabburner M.A., Galler R.A., Ramanatides P.G., Scherer S.E., Holt R.A., Sabburner M.A., Galler R.A., Ramanatides P.G., Scherer S.E., Holt R.A., Sabburner M.A., Henderson S.N., Ramanatides P.G., Scherer S.E., Holt R.A., Zahag Q., Chen L.X., Raman S.H., Coyle C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G., Raman M.A., Steiner M.A., Pfeiffer B.D., Ramandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Ramandon R.C., Moyle C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G., Raman M.H., Doyle C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G., Raman M.H., Doyle C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G., Raman M.H., Doyle C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G., Raman M.H., Doyle C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G., Raman B.P., Bhandari D., Bolshakov S., Raman M.H., Dayle C., Barris M.L., Beasley E.M., Andrews-Pfannkoch C., Baldwin D., Borkster G., Barris M.L., Baxendale J., Bayraktaroglu L., Beasley E.M., Raman M.R., Bouck J., Brokstein P., Brottler P., Bovles P., Raman B.P., Bhandari D., Bolshakov S., Raman M.R., Borkstein P., Brottler P., Bovles P., Raman B.P., Bhandari D., Bolshakov S., Davles P., Barris M., Beeson K., Dayle Z., Mayraktaroglu L., Beasley E.M., Parkstein M., Raman M.P., Bolcher A., Dapar R., Bouck J., Brokstein P., Brait S., L., Langer K., Bouck J., Barris M.L., Harvey D., Helman T.J., Hernandez J.R., Houck J., Raman M., Glasser K., Raman M., Brait M., Harvey D., Helman T.J., Hernandez J.R., Houck J., Raman M., Harvis N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J., Raman M., Mary 
В
                                                        δÃ
                                                                                                                                                                                                                                                                                                    SOUR BEAUTION OF THE PROPERTY 
                                                                                                                                                                                                                                                                                                                      PROSITE; PS00639
SMART; SM00249;
                                                                                                                                                                                                                                                                                                                             PRINTS; PR00308; ANTIFREEZEI.
PRINTS; PR00334; KININGEN.
PROSITE; PS00639; THIOL_PROTEASE_HIS; UNKNOWN_1.
SMART; SM00249; PHD; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000169; -.
InterPro; IPR001965; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00628; PHD; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000104; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2001 (TrEMBLrel. CG6632 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CG6632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=20196006;
                                                                                                                                  Local Similarity
les 8; Conser
                                                               N
                                                           HGHGHGKHKNKG
HGHGHGHHSSSG 487
                                                                                                                                                                                                                                                                                                    686 AA;
                                                                                                                              Conservative
                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=10731132;
                                                                                                                                                                                                                                                                                                    70647 MW;
                                                                                                                                                              57.1%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16, Last annotation update)
                                                                                                                                                              Score 56; DB 5 Pred. No. 0.93;
                                                                                                                                                                                                                                                                                                 17C56F19B5D2B901 CRC64;
                                                                                                                                  Mismatches
                                                                                                                                                                                              5;
                                                                                                                                                                                              Length 686;
                                                                                                                           0;
                                                                                                                              Gaps
                                                                                                                           0,
```

Run

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match
Maximum Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
DB
                                                                                                                                                                                                                                                                                                                                                           Score
 54.55
54.55
55.55
55.55
56.55
57.55
57.55
57.55
57.55
57.55
57.55
57.55
57.55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5:
6:
7:
9:
10:
11:
13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPTREMBL_16:*
1: sp_archea:*
2: sp_bacteria
                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                            Query
 552.0

51.0

52.0

53.0

54.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0

55.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-437-912-8
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               July 6, 2001, 09:25:55; Search time 118.42 Seconds (without alignments) 17.876 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Listing first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_phage: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sp_fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_plant:*
                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human:*
450
125
643
1891
1893
1193
3169
35469
350
79
353
333
554
819
2230
1493
229
                                                                                                                                                                                                                                                                                   126
255
686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                         В
   Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100%
45 summaries
                                              Q9M435
Q9FH30
Q9W4C1
Q9WHR3
Q9VY40
                                                                                                                                       Q9VWS0
Q27920
Q9P6B0
Q9U229
Q77275
Q9W4J1
Q9W4E8
Q9W4I2
                                                                                                                                                                                                                                                                                                    009016
Q9VK49
                Q9VEF7
Q9XUI2
                                                                                                                                                                                                                                                                                                                                                         H
                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.5
Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425026
           009016 rattus norv
09vk49 drosophila
09vws0 drosophila
027920 bradysia hy
09p6b0 neurospora
09u229 caenorhabdi
077275 drosophila
09w431 drosophila
09w462 drosophila
09u412 drosophila
09u412 drosophila
09u412 drosophila
09u413 quercus rob
09fh00 arabidopsis
09w4C1 drosophila
09vy40 drosophila
                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                      밁
                                                                                                                      δÃ
```

G	4	w	N	_	0	õ	œ	7	õ	Ü	4	ũ	Ñ	ش	ö	Ö	æ	7	õ	Ğ	4	ω̈	Ñ	ï	õ
47.5	48	48	48	48	48	48	48	48	48	48	48	48	48.5	48.5	49	49	49	49.5	50	50	50	50	50	50	50
	49.0			49.0		49.0		49.0	•								50.0			•	51.0		51.0		51.0
142	1299	1268	1085	1064	1029	963	484	375	251	207	198	110	199	197	563	325	. 126	140	1920	1235	1018	606	601	550	444
S	ഗ	ഗ	σ	Çī	Çī	رت	N	10	رى ر	10	Ç	10	10	10	5	Ģ	10	σ	Ģ	υ	IJ	Ç	رح.	Ų	5
Q9W152	Q9U5x0	Q9V4I9	024455	Q9V5N1	Q9N9H6	Q9U5x1	Q9R7U0	P93066	Q18577	Q43397	6ANN6Ö	064396	Q9LYB2	Q9SM38	Q9VPS6	Q9VYM9	Q9M4H2	Q9XWP9	046205	Q9VYF3	Q9VX18	Q9VSV0	P92138	017145	076472
Q9w152 drosophila	. Q9u5x0 drosophila	Q9v4:i9 drosophila	Q24455 drosophila		Q9n9h6 drosophila	Q9u5x1 drosophila	Q9r7u0 escherichia	P93066 brassica na	Q18577 caenorhabdi	Q43397 brassica na	Q9nnv9 plasmodium	O64396 pisum sativ	Q9lyb2 arabidopsis	æ		Q9vym9 drosophila	Q9m4h2 vitis vinif	Q9xwp9 caenorhabdi	O46205 drosophila		Q9vx18 drosophila	0	P92138 drosophila	017145 lucilia cup	076472 musca domes

# ALIGNMENTS

```
RESULT 1

O09016

ID 009016;

AC 009016;

DT 01-JUL-1997

DT 01-JUL-1997

DT 01-OCT-2000

E-KININOGEN (
GN KNGK.

OS RATTUS NOTVEG

OC ENKATYOTA; ME

OC MAMMAILA; ENT

OX NCBLTAXID-1(
RN [1]

RN [1]

RN [1]

RN [1]

RN SEQUENCE FROM

RC STRAIN-DONRY(
RX MEDLINE-97466

RA HATTIS E.L.,

RA JACOD H.J.;

RT JACOD H.J.;

RT STRAIN-GENOME

RT KININOGEN GENOME

RT KININOGEN GENOME

INTER MAMM. GENOME

DR MINTS; PROO.

FT NON_TER

FT NON_TER

FT NON_TER

FT NON_TER

FT NON_TER

FT NON_TER

FT NON_TER
RESULT 2
Q9VK49
ID Q9VK49
                                                                                                                                         Best Loc
Matches
                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; C
Mammalia; Eutheria; F
NCBI_TaxID=10116;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mamumalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                              kininogen genes allow mapping Mamm. Genome 8:791-792(1997).
                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=97468288; PubMed=9321484; Harris E.L., Grigor M.R., Innes B.A., Harrap S.B., Koike
                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-DONRYU;
                                                                                                                                                                                                                                                                 PRINTS; PR00334; KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                           Strain-specific deletions in exon 10 of rat K-kininogen and T1-ininogen genes allow mapping of both genes to rat chromosome 11.";
                                                                               78
                                                                                                                                         Local Similarity 60.0 es 12; Conservative
                                                                             AF003623; AAC09070.1; -. Pro; IPR002395; -.
                                                                                                                                                                                                                   1 1
126 126
126 AA; 14092 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. 04, (TrEMBLrel. 04, )) (TrEMBLrel. 15, )
   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                        66.3%;
60.0%;
                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                        Score
Pred.
   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                     9CCDF8751DA49C88 CRC64;
                                                                                                                                         Mismatches
                                                                                                                                                           NO.
                                                                                                                                                                        65;
   255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126
                                                                                                                                                        0.0076;
                                                                                                                                                                        DB 11;
   AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ã.
                                                                                                                                                                      Length 126;
                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                            6.
                                                                                                                                         4;
                                                                                                                                         Gaps
                                                                                                                                         ۲.
```

SES PAGE BLANK (USPTO)

THIS PAGE BLANK (USPTO)

SQUETTITE TO THE TENT OF THE T

```
NB2M_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 9
            Loeffen J., Smeets R., van den Heuvel L., Ruitenbeek W., Trijbels F., Smeitink J.;
"Human Bl2 subunit of NADH:ubiquinone oxidoreductase: cD chromosomal localization, tissue distribution, mutation chromosomal localization, tissue distribution, mutation
                                                                                                                                                                                      Ton C., Hwang D.M., Dempsey A.A., Liew C.-C.; "Identification and primary structure of five human oxidoreductase subunits.";
                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                               15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
NADH-UBIQUINONE OXIDOREDUCTASE B12 SUBUNIT (E
                                                                                                                                                                                                                                                                                                                                                                                                                           043676;
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a licence according
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWI
between
    ÷
                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                   MEDLINE=98086396; PubMed=9425316;
                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         NB2M_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01545; Cation_efflux;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                    (COMPLEX I-B12) (CI-B12).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 HGHGHGKHKNKGKK
   TO BE UBIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HGHGHG-HLAKGAR 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U17133; AAA79234.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
9; Conserv
                                                                                                                                                                          Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR002524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
32
36
57
79
100
114
135
248
269
308
329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
    ACTIVITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transmembrane; Multigene family; Rep
10 CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                            Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31
35
56
78
99
113
113
134
247
268
307
307
                                                                                                                                                                                                                                                                                                            Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 55142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.5%;
                                                                                                                                                                         Commun. 241:589-594(1997).
   NADH +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Œ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 47.5; E
Pred. No. 5.6;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6 X 2 AA APPROXIMATE REPEATS OF H-G.
N-LINKED (GLCNAC. . .) (POTENTIAL).
; 9F9770017C2455FC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
CYTOPLASMIC (POTENTIAL)
6 X 2 AA APPROXIMATE RE
                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
UBIQUINONE = NAD(+) + UBIQUINOI
                                                                                                                                                                                                                                                                                                                                                                                                                                                        97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                         Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   family; Repeat
                                                                                                                                                                                                                                                                                                                                                                                (EC 1.6.5.3) (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                            ENZYME
                                                                                                                                                                                                                                                                                                                         Euteleostomi;
                                                                                                                                                                                                    NADH-ubiquinone
                                                                                                                              W.,
                                                                                                                                                                                                                                                                                                          Homo
                                                                                                 cDNA cloning,
                                                                                   detection,
                                                                                                                              Sengers
                            IS BELIEVED
                                                                                                                                                                                                                                                                                                                                                                                1.6.99.3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      commercial
                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
```

밁 δÃ

```
RESULT 15
KE4_BRARE
ID KE4_B
    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 7
                                                          Transmembrane;
TRANSMEM 128
TRANSMEM 161
TRANSMEM 215
TRANSMEM 215
TRANSMEM 318
                                                                                                                                                                                                                                                                                                                                                                                                          KE4_BRARE STAN
Q9PUB8;
01-OCT-2000 (Rel. 4
01-OCT-2000 (Rel. 4
01-OCT-2000 (Rel. 4
  CARBOHYD
NON_TER
SEQUENCE
                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                               EMBL; AF196345;
                                                                                                                                                       or send an
                                                                                                                                                                                                                                                                                                                                        Brachydanio rerio (Zebrafish) (Zebra danio).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi
Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INIT_MET MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                     DOMAIN
                                                  DOMAIN
                                                                                                                                                                   entities
                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=7955
                                                                                                                                                                                                                                                                                                                                                                                                  HISTIDINE-RICH MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oxidoreductase;
INIT_MET 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                         HKE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF047183; AAC04268.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- SUBCELLULAR LOCATION: MITOCHONDRIAL INNER MEMBRANE; MATRIX SIDE.
                                                                                                                                                                                                                                                                                                        EQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 EHGHEHGHHK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 KHGHGHGKHK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; AF035839; AAC15590.1; 603839; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7; Conserv
                                                                                                                                                    requires a license agreement (See an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97
                128
161
215
318
318
177
177
311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                   Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
23
148
181
235
338
338
105
217
217
311
352
37922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                               AAF05821.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAD;
                                                                                                                                                                                                                                                                                                                                                                                                          40, Created)
40, Last sequence update)
40, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11271 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ubiquinone; Mitochondrion; Acetylati
0 BY SIMILARITY.
1 ACETYLATION (BY SIMILARITY).
1271 MW; 851709573DD5E586 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             48.0%;
                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN KE4
    ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .' .'
                                    POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
HIS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 47; Pred. No.
                          N-LINKED
   C8C8C60F6D2BA8A6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mitochondrion; Acetylation
                                                                                                                                                                                                                                                                                                                                                                                                 on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           352
                          (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ΑA
                                                                                                                                                                 http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                 (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                                                                                  gene in zebrafish.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 97
                        .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                    Ostariophysi;
                                                                                                                                                                                                  restrictions
                                                                                                                                                                              and
                                                                                                                                                                                                             EMBL
                                                                                                                                                                                                               a collaboration - MBL outstation
                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                              commercia
                                                                                                                                                                                        no
                                                                                                                                                                                                    on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOD_RES
SEQUENCE
                                                                                                                                                                   Palmiter R.D., Findley S.D.;
"Cloning and functional characterization of a mammalian zinc transporter that confers resistance to zinc.";
EMBO J. 14:639-649(1995).
-i- FUNCTION: MAY BE INVOLVED IN ZINC TRANSPORT OUT OF THE CELL.
LETHALITY OF KNCCKOUT EARLY IN GESTATION SUGGESTS A ROLE OF PROTEIN IN FETAL ZINC ACQUISITION AND RETENTION.
-i- SUBUNIT: MULTIMER (PROBABLE).
-i- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q60738;
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          modified and this statement is not removed. entities requires a license agreement (See
                                                        between
                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLC30A1 OR ZNT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZNT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR000410; -. InterPro; IPR000658; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AE000162; AAC73671.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute.
                                                                        This SWISS-PROT entry is copyright. It is produced through a
                                                                                                                                                                                                                                                                                                                                       MEDLINE=95188868; PubMed=7882967;
                                                                                                                                                                                                                                                                                                                                                                FISSUE-Brain;
                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NIAMOC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00672; DUF5; 1.
Pfam; PF00512; signal; 1.
Hypothetical protein; Sensory transduction; Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EcoGene; EG13642; ybcz.
                                   European Bioinformatics Institute.
                                                                                                             TISSUE SPECIFICITY: WIDELY EXPRESSED. SIMILARITY: BELONGS TO THE SLC30A FAMILY OF TRANSPORTERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: TO OTHER PROKARYOTIC SENSORY TRANSDUCTION HISTIDINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSE
                                                                                                                                                   LOCALIZED ON THE PLASMA MEMBRANE (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AY 2000 (Rel. 39, Created)
AY 2000 (Rel. 39, Last sequence update)
CT-2000 (Rel. 40, Last annotation update)
TRANSPORTER 1 (ZNT-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHGHMEHSN 147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGHGHGKHKN 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U82598;
                                                    the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
208
271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ROT entry is copyright. It is produced through Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB40768.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inner membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
36
186
207
480
271
                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          53738 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49.0%;
institutions as long tement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 48;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
PHOSPHORYLATION (AUTO-) (BY SIMILARITY);
B3D78C0810241519 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cyropLasmic (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PERIPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       503 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
4.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
             There are no restrictions in as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 480
                                                    and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
 and for
                                                        EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                        collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                 THE
                   no
no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

Оy

```
뮻
                                                                                                                                                                                                                                                                                                                                                    Q
                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                           ZNT1_RAT
Q62720;
30-MAY-2000
    CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
DOMAIN
                                                                                                                                                  Palmiter R.D., Findley S.D.;
"Cloning and functional characterization of a transporter that confers resistance to zinc.";
                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                           30-MAY-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                      RAT
                                                                                                          TISSUE=Intestine;
MEDLINE=98226729; PubMed=9560190;
                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
                                                                                                                                                                                                                                           SLC30A1 OR ZNT1
                                                                                                                                                                                                                                                   ZINC TRANSPORTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                             EMBO
                                                                                                                                                                           MEDLINE-95188868; PubMed-7882967;
                                                                                                                                                                                    TISSUE-Kidney
                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                           NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zinc;
                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                            NDUCTION BY ZINC.
                                                                                                                                                                                                                                                                                                                                     150
                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                      2 HGHGHGKHKNKGKK 15
                                                                                                                                           J. 14:639-649(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGI:1345281;
                                                                                                                                                                                                                                                                                                                                     HGHGHG-HLAKGAR 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pro; IPR002524; PF01545; Catio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U17132; AAA79233.1;
                                                                                                                                                                                                                                                                                                                                                                     Similarity
9; Conser
                                                                                                                                                                                                                                                           (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              79
100
114
                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11
32
36
57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cation_efflux; 1.
                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                           31
35
37
78
99
113
113
243
243
303
324
303
324
503
54716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transmembrane; Multigene family; Repeat.
                                                                                                                                                                                                                                                           39, Created)
39, Last sequence update)
40, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S1c30a1.
                                                                                                                                                                                                                                                  (ZNT-1).
                                                                                                                                                                                                                   Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                             48.5%;
                                                                                                                                                                                                                                                          Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                               MW;
                                                                                                                                                                                                                                                                                                                                                                            Score 47.5;
Pred. No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC (POTENTIAL).

6 X 2 AA APPROXIMATE REPEATS OF H-G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR (POTENTIAL)
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC
                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                              TINKED (GLCNAC. . .) (P
7C4FF93FC13CDA22 CRC64;
                                                                                                                                                                                                                                                                                                                                                                     ed. No. 5.6;
Mismatches
                                                                                                                                                                                                                                                                                             507
                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                      ļ.
                                                                                                                                                          mammalian
                                                                                                                                                                                                                                                                                                                                                                      w
--
                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                    Rattus
                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                      1;
```

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A_Geneseq_0601:*

1: /SIDSB/gcgdatr
2: /SIDSB/gcgdatr
3: /SIDSB/gcgdat
4: /SIDSB/gcgda
5: /SIDSB/gcgd
6: /SIDSB/gcgd
6: /SIDSB/gcgd
7: /SIDSB/gcgd
9: /SIDSB/gc
8: /SIDSB/gc
10: /SIDSB/gc
11: /SIDSB/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                  Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                  Match
                                        100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-437-912-3
79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /SIDSB/gcgdata/geneseq/geneseqp/AA1980.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1982.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1984.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1984.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1988.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 //SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1994.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1994.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1996.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1998.DAT:*
//SIDS8/gcgdata/geneseq/geneseqp/AA1998.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA2000.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6, 2001, 09:09:17; Search time 113.68 Seconds (without alignments) 6.399 Million cell updates/sec
          12
28
47
62
63
83
94
131
179
186
255
                                                                                                                                                                                                                                                                                                                                                                                                      DВ
             21
21
21
21
21
21
21
21
                                                                                                                                                                                                                                                                                                                                                                                                      IJ
                                    AAY81994
AAY81997
AAY93345
AAY93346
AAR75186
AAY93347
AAY93351
AAR75181
AAR75181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
Human high molecul
Human high molecul
Light chain of hum
Light chain of hum
Partial peptide of
Light chain of hum
                                                                                                                                                                                                                                                                                                                                                                                            Description
```

49	49	50	50	50	50	51	51	52	52	N1	52.5	K1	53	53	53	55	59	60	62	62	62	62	62	62	62	62	62	62	62	62	8	72	72	
62.0	.2	Ψ	Ψ	w •	ω ·		4	5	5	6		ა	7.	7.	7.	9	٠	5	8	8	8	8	8.5	8	ω.	œ		8	œ	ε.	86.1	۲.	1.	
21	20	488	473	441	345	1213	1213	19	16	490	307	293 -	831	180	177	564	69	20	453	425	398	398	389	389	344	344	330	330	309	309	11	110	41	
21	17	21	21	21	19	18	17	21	21	21	21	21	22	19	21	19	16	17	21	21	21	21	21	21	21	21	21	21	21	21	21	16	16	
AAY93344	AAW07626	AAG26458	AAG26459	AAG26460	AAW41166	AAW25029	AAW06086	AAY71879	AAY81999	AAY86241	AAY86410	AAY86316	AAB87345	AAW72390	AAG42194	AAW74581	AAR75179	AAW07625	AAG22953	AAG06063	AAG43478	AAG22263	AAG22954	AAG06064	AAG43479	AAG22264	AAG43480	AAG22265	AAG22955	AAG06065	AAY93352	AAR75178	AAR75180	
chain	Human high polymer	bidopsis	idopsis	Arabidopsis thalia	Metal-regulated tr	TATA-binding prote	Drosophila TATA-bi	ň		secreted	Human gene 27-enco	secrete	Human gene 4 encod	Pathogen response	bido	5' fragment of mem	Partial peptide of	Human high polymer		Arabidopsis thalia	Arabidopsis thalia		Arabidopsis thalia					4	_	Arabidopsis thalia	t chain of hu	ide	ial peptide o	

# ALIGNMENTS

AAY81994 RESULT

AAY81994 standard; peptide; 12

A

9- 4-K-X-K-X2

AAY81994;

40

ហហហ

XX SO XX Human; high molecular weight kininogen; HK; two-chain high molecular weight kininogen; HKa; anglogenesis inhibhtion; tumour; cancer; ocular disorder; rheumatoid arthritis; endothelial cell apoptosis. WPI; 2000-376483/32. 10-NOV-1998; (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K. 05-NOV-1999; W0200027866-A1 Homo sapiens. Human high molecular weight kininogen domain 5 fragment #3 16-OCT-2000 (first entry) 18-MAY-2000. 98US-0107833 99WO-US26419

A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis

```
RESULT
AAY81997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                     WPI;
                                                                                                                                                                                                               (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be
The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain
                                                           Claim 13; Page 29; 52pp; English.
                                                                                                       A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                  McCrae
                                                                                                                                                                                                                                                                                        05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                    WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                           two-chain high molecular weight kininogen; HKa; angiogenesis inhibition; tumour; cancer; ocular disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human high molecular weight kininogen domain 5 fragment #6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising part or all of the present sequence may be used in a pharmaceutical composition for inhibiting anglogenesis. Angiogenesis occurs in a number of disease states, such as tumour formations.
                                                                                                                                                                                                                                                           10-NOV-1998;
                                                                                                                                                                                                                                                                                                                      18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                              rheumatoid arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; high molecular weight kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY81997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY81997 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        chemically synthesised, using, for example,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 formation and expansion, and certain ocular disorders. It can also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                   2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ghkhkhghghgk 12
                                                                                                                                                                                                               UNIV TEMPLE.
MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                natural peptides, or synthetic peptides. They may also in the synthesis of example, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                           98US-0107833
                                                                                                                                                                                                                                                                                        99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52pp;
                                                                                                                                                                                                                                                                                                                                                                                                             endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 79;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 21;
2.1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
```

```
AAY93345
ID AAY9
       Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 12
The present sequence represents a fragment of the light chain of huma high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (DUPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may recombinant pentides a patural position of the provision pentides are provided to the composition may be recombinant than the provision of the provisio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                            Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Light chain of human high molecular weight kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93345 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 peptides,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (MOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chemically
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
nes 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ghkhkhghghgk 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ) DUPONT PHARM CO.
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   UNIV TEMPLE
                                                                                                                                                                                                                                                       Page 36; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      natural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         synthesised,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptides, or synthetic peptides. They may also sised, using, for example, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 79; DE
Pred. No. 5.3
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.3e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
AAY93348
ID AAYS
SSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 12
                      The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                          WPI;
Sequence
                                                                                                                                                                                                                   Claim 6;
                                                                                                                                                                                                                                             Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                     Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiggenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                          10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY93348 standard; peptide; 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                   (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                             (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GHКНКНGНGНGК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens.
                                                                                                                                                                                                                                                                                                                                                  MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                              DUPONT PHARM CO. COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                  Page
62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
A
A
                                                                                                                                                                                                                37; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      99WO-US26377..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 79; DB 21; Pred. No. 9.2e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

Query Match

100.0%;

Score 79;

DB 21;

Length 62;

```
RESULT
AAR75186
AAY93347
                                                                                                                                                                                             В
                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                        XX
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ŷ
                                                                                                                                                                                                                                         Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 12; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity Matches 12; Conserv
        Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                        ARR75186 is a partial peptide corresponding to human kininogen fragment 1, amino acids 458-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activit
                                                         Light chain
                                                                                 04-SEP-2000
                                                                                                         AAY93347;
                                                                                                                               AAY93347 standard; peptide;
                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                        A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR75186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR75186 standard; peptide; 63
                                                                                                                                                                                                                                                                                                                               on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (FARH ) HOECHST JAPAN KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wound treating agent; bovine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                high molecular weight; kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Partial peptide of human HMW kininogen
                                                                                                                                                                                             37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          36 ghkhkhghghgk 47
                                                                                                                                                                                                                    1 СИКНИНСИСИСК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 СНКНКНСНСНСК
                                                                                                                                                       6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      տ
                                                                                                                                                                                     ghkhkhghghgk 48
                                                                                                                                                                                                                                                                                                                                                                                                                Page 8; 8pp;
                                                                                                                                                                                                                                                                                                        63
                                                         of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ilarity 100.0%;
Conservative
                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                         high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                 Japanese.
                                                                                                                                 83
                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                         Score 79; DB 16;
Pred. No. 1.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 1.2e-05; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gen; fragment; 1.2; 1; 2; partial;
growth promotion; fibroblast.
                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        fragment
                                                                                                                                                                                                                                                                                                                                          growth promotion activity
                                                                                                                                                                                                                                                                  Length 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
RESULT
AAY93351
밁
                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting
                                                                                                             Synthetic
                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                              Light chain
                                                                                                                                                                                                                        04-SEP-2000
                                                                                                                                                                                                                                                                             AAY93351 standard; peptide; 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 5; Page 37; 41pp; English.
           09-NOV-1999;
                                       18-MAY-2000
                                                                   WO200027415-A2
                                                                                               Homo
                                                                                                                                                                                                                                                    AAY93351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Colman WR, Mousa AS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UTEM ) UNIV TEMPLE
(DUPO ) DUPONT PHARN
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (/Snow
                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                57 ghkhkhghghgk 68
                                                                                                                                                                                                                                                                                                                                                                            1 СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                          7
                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                         12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DUPONT PHAN
COLMAN W R
MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83
                                                                                                                                                                                            of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHARM CO
           99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 79; DB 21;
Pred. No. 1.7e-05;
                                                                                                                                                                                                                                                                              AA
                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                            analogue
                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
RESULT
AAR75181
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell prolliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell prolliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used for inhibiting endothelial cell prolliferation. The compounds to used to inhibit migration of endothelial cells to vitronectin.
          Claim 7; Page 7; 8pp; Japanese
                                     A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains.
                                                                                 WPI; 1995-158909/21
                                                                                                                                        17-SEP-1993; ·
                                                                                                                                                                      17-SEP-1993;
                                                                                                                                                                                                  28-MAR-1995
                                                                                                                                                                                                                             JP07082172-A
                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                 high molecular weight; kininogen; wound treating agent; human; growi
                                                                                                                                                                                                                                                                                                                          Partial peptide of human HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                                                                                                                                        05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                   AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                              AAR75181 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Colman WR, Mousa AS
                                                                                                            (FARH ) HOECHST JAPAN KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence represents an analogue of the light chain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity nes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57 ghkhkhghghgk 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                          œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Page 39; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΑĄ;
                                                                                                                                          93ЛР-0230616
                                                                                                                                                                      93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                            peptide; 131 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                  growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 79; DB 21;
Pred. No. 1.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                  fragment; 1.2; 1; 2; partial;
th promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY93353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                         The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cell proliferation. The method comprises contacting the invention with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to inhibit of endothelial cell proliferation and the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of endothelial cells of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to inhibit of the compounds can also be used to the compounds can also be used to the compounds can also be used to the compounds can be used to the compounds can 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                           Claim 11; Page 40-41; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                     Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration \, -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Colman WR, Mousa AS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93353 standard; peptide; 179 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                               inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MATCH 100.0%; Local Similarity 100.0%; es 12; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHКНКНGНGНGК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ghkhkhghghgk 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DUPONT PHARM CO. COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99WO-US26377.
                                               of
                                               endothelial cells to vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 79; DE
Pred. No. 2.7
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 16;
. 2.7e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

Sequence

179

Qy

1 GHKHKHGHGHGK 12 ghkhkhghghgk

뮹

```
RESULT 1
AAY93349
ID AAY9
XX
AC AAY9
XX
AC AAY9
XX
AC AAY9
XX
XX
                                                                                     ΧPN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ωy
                    Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                        The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kbg glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                   (UTEM )
(DUPO )
(COLM/)
                                                                                     Sequence
                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                            Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plasma kallikrein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; high molecular weight kininogen; glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93349 standard;
                                                                                                                inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                       (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                     Local Similarity
nes 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29 ghkhkhghghgk 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                      MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                 DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNIV TEMPLE.
                                                                                                                                                                                                                                                                                            Page
                                                                                     186 AA;
                 100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                            Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                           38; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide; 186 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        heavy chain; light chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                            English.
                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                Score 79;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 79; DB 21;
Pred. No. 3.8e-05;
DB 21;
Lu. No. 4e-05;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                to vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ,
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     analogue; angiogenesis;
                                             Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     endothelial cell;
                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
RESULT 1
AAR75180
ID AAR7
XX
AC AAR7
XC AAR7
XX
DT 05-C
XX
DE Part
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
AAY93342
                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                   Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                The present sequence represents the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
Partial peptide of HMW kininogen fragment 2
                              05-DEC-1995
                                                          AAR75180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93342
                                                                                    AAR75180 standard;
                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200027415-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93342 standard; protein; 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                         105 ghkhkhghghgk 116
                                                                                                                                                                                                                    Local Similarity nes 12; Conser
                                                                                                                  12
                                                                                                                                                                          1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DUPONT PHARM CO COLMAN W R.
                                                                                                                                                                                                                                                                                          255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 3; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of human high molecular weight kininogen
                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US26377.
                                                                                    peptide;
                                                                                                                                                                                                                                100.0%;
                                                                                     41
                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                Score 79; [Pred. No. 5.
                                                                                     Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ã
                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                DB 21;
5.5e-05;
                                                                                                                                                                                                                                            Length 255;
                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     compound
                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                   0
```

```
B
                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SXCCCCCCXXXX PTXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    XX
                                                                                                                                                                                                                                                                                                      AAR75178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 11; Conserv
                                                                             Misc-difference
                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR75179 is a partial peptide corresponding to bovine kininogen fragment 2, amino acids 456-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns, and act as the active component. The fragments are
17-SEP-1993;
                                           JP07082172-A.
                                                                                                                            Misc-difference
                                                                                                                                                               Bos taurus
                                                                                                                                                                                  high molecular weight; kininogen; wound treating agent; bovine; grow
                                                                                                                                                                                                                      Partial peptide of HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                              05-DEC-1995
                                                                                                                                                                                                                                                                     AAR75178;
                                                                                                                                                                                                                                                                                           AAR75178 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               useful in wound on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 6; Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      high molecular weight; wound treating agent; |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bos taurus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (FARH ) HOECHST JAPAN KK.
                                                                                                                                                                                                                                                                                                                                                     15
                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                          1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                  ghghkhghghgk 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                         41 AA;
                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                           (first entry)
 93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93JP-0230616
                                                                            69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93JP-0230616
                                                                                                                            Location/Qualifiers
                                                                  /label= Lys or Arg
                                                                                         label= Val or Leu
                                                                                                               label=
                                                                                                                                                                                                                                                                                                                                                                                                             91.18;
91.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; kininogen; fragment; 1.2; 1; 2; partial; bovine; growth promotion; fibroblast.
                                                                                                                 Pro,
                                                                                                                                                                                                                                                                                            110 AA
                                                                                                                                                                                                                                                                                                                                                                                                            Score 72;
Pred. No.
                                                                                                                                                                                   growth
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                fragment; 1.2;
                                                                                                                                                                                   promotion;
                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                        DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                  .3e-05;
les 1;
                                                                                                                                                                                     ; 1; 2; partial; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                      Length 41;
                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

17-SEP-1993;

93JP-0230616

0;

```
AAY93352
ID AAY
   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a mathematical contraction of the specification describes a mathematical contraction.
                                                                                                                                                      WPI;
                                                                                                                                                                                                                                                                                                                                                                                                      Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   have
                                                                                       Claim 10;
                                                                                                                           Method
                                                                                                                                                                               Colman
                                                                                                                                                                                                                   (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARN
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                                                                    18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                             WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Light chain of human high molecular weight kininogen analogue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93352;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY93352 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fragment 1.2, amino acids 387-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent component. The fragments are the active component. The fragments are useful in wound treating because they have growth promotion activity.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR75178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      fibroblasts.
                                                                                                                                                      2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               || |||||||||
ghghkhghghgk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1995-158909/21
                                                                                                            {\tt id} for inhibiting endothelial cell proliferation, using compound inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                   sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and treating agent contg. a partial peptide of kininogen growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                              WR,
                                                                                                                                                                                                                   DUPONT PHARM CO. COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                       MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is a partial peptide corresponding
                                                                                      Page 40; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                  molecular weight kininogen;
ikrein; heavy chain; light ch
                                                                                                                                                                              Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6;
                                                                                                                                                                                                                                                                                            99WO-US26377.
                                                                                                                                                                                                                                                                   98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gpp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             91.18;
91.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 줐
                                                                                       English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             72; DB 16;
No. 0.00027;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to bovine kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SSSSSSXX
```

```
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                     30-APR-1999;
30-APR-1999;
04-MAY-1999;
05-MAY-1999;
06-MAY-1999;
06-MAY-1999;
07-MAY-1999;
                             11-MAY-1999;
14-MAY-1999;
14-MAY-1999;
14-MAY-1999;
14-MAY-1999;
18-MAY-1999;
19-MAY-1999;
                                                                                                                                                                                                                                                    29-MAR-1999;
01-APR-1999;
06-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                25-FEB-1999;
05-MAR-1999;
          20-MAY-1999;
21-MAY-1999;
                                                                                                                                                                             23-APR-1999,
28-APR-1999,
                                                                                                                                                                                                                                           08-APR-1999;
                                                                                                                                                                                                                                                                                  23-MAR-1999;
25-MAR-1999;
                                                                                                                                                                                                                                                                                                       09-MAR-1999
                                                                                                                                                                                                                                                                                                                                                25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                     06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Protein identification; signal transduction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana protein fragment SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAG06065;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAG06065 standard; Protein; 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                      19-APR-1999
                                                                                                                                                                                                                                16-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                  termination
                                                                                                                                                                                                                                                                                                                                                                                                                                          hybridisation assay; genetic mapping; gene expression control;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ||||||||||
ghkhkhghgh 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           СНКНКНСНСН 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                2000EP-0301439
        99US-0134256.
99US-0134219.
99US-0134221.
99US-0134221.
99US-0134370.
99US-0134764.
99US-0135124.
99US-0135124.
                                                                                                                           99US-0132485
99US-0132486
                                                                                                                                                          99US-0132048
99US-0132407
                                                                                                                                                                                                  99US-0130449.
99US-0130510.
                                                                                                                                                                                                                                                                                                                     9908-0121825.
                                                                                                       99US-0132863.
                                                                                                                  99US-0132487
                                                                                                                                              99US-0132484.
                                                                                                                                                                               9908-0131449
                                                                                                                                                                                          99US-0130891
                                                                                                                                                                                                                               9908-01
                                                                                                                                                                                                                                                     99US-0128234.
                                                                                                                                                                                                                                                               99US-0127462
                                                                                                                                                                                                                                                                         99US-0126785
                                                                                                                                                                                                                                                                                  99US-0126264.
                                                                                                                                                                                                                                           99US-0128714
                                                                                                                                                                                                                                                                                              99US-01
                                                                                                                                                                                                                                                                                                       99US-0123548.
                                                                                                                                                                                                                                                                                                                 99US-0123180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          86.1%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 21;
9.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      pathway; metabolic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2701.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  can also be
be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                          pathway;
promoter;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק ק	PR P
00000000000000000000000000000000000000	25 27 27 01 01 03 04 07 07 10 11 11 11
	-MAY-1 -MAY-1 -MAY-1 -JUN-1 -JUN-1 -JUN-1 -JUN-1 -JUN-1 -JUN-1 -JUN-1
	\$2066 \$2066 \$2066 \$2066 \$2066 \$2066 \$2066 \$2066
9908 0139453 9908 0139454 9908 0139455 9908 0139456 9908 0139456 9908 0139461 9908 0139461 9908 0139461 9908 0139463 9908 0139463 9908 0139463 9908 0140695 9908 0140893 9908 0140893 9908 014287 9908 014287 9908 014287 9908 014287 9908 014287 9908 014287 9908 014287 9908 014287 9908 0144884 9908 0144884 9908 0144531 9908 0145518 9908 0145518 9908 0145513 9908 0145513 9908 0145513 9908 0145513 9908 0145513	5-0136 5-0136 5-0137 5-0137 5-0137 5-0137
333455 33355 33355 33355 33355 33355 33355 33355 33355 33355 33355 33355 33355 33355 3355 3355 3355 3355 3355 3355 3355 3355 3355 3557 357	36021. 36392. 36782. 37528. 37528. 37524. 38094. 38094. 38847.
	מס מס מס ממס ממס ממס ממס ממס ממס ממס מס
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
AUG AUG AUG AUG AUG AUG AUG AUG AUG AUG	03-AUG- 04-AUG- 04-AUG- 05-AUG- 05-AUG- 06-AUG- 06-AUG- 09-AUG- 11-AUG- 11-AUG- 11-AUG-
	199999999999999999999999999999999999999
99US -014 99US -014 99US -014 99US -014 99US -014 99US -015 99US -	0.800
1449175 149175 149723 149723 149920 149920 149920 149920 149920 149920 149920 149920 149920 149920 149920 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 151086 15108	147038 147204 147302 147192 147193 147260 147303 147410 147410 147493 147493 147493 147493 147493 147493 147493 147493
·	

THIS PARE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
       5
5
7
7
10
110
                                                                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                       Score
       86
86
86
86
86
86
86
86
86
86
86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A_Geneseq_0601:*

1: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*

2: /SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*

3: /SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:*

4: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*

5: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*

6: /SIDS8/gcgdata/geneseq/geneseqp/AA1986.DAT:*

7: /SIDS8/gcgdata/geneseq/geneseqp/AA1986.DAT:*

8: /SIDS8/gcgdata/geneseq/geneseqp/AA1986.DAT:*

9: /SIDS8/gcgdata/geneseq/geneseqp/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 0
length: 2000000000
                                                                                                                                                                                                                       Query
Match Length
       100
100
100
100
100
100
100
                                                                                                                                                                                                                                                                                                                                                                                 10:
11:
12:
13:
13:
14:
15:
16:
16:
17:
19:
20:
21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              July
                                                                                                                                                                                                                                                                                                                                                                       /SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1989.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-437-912-8
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6, 2001, 09:09:18; Search time 113.68 Seconds (without alignments) 8.533 Million cell updates/sec
     16
20
28
47
62
63
83
94
131
179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 4.5 (c) 1993 - 2000 Comp
                                                                                                                                                                                                                        DВ
       17
21
21
21
16
21
21
21
21
                                                                                                                                                                                                                        IJ
                      AAY81999
AAW07625
AAY83345
AAY93348
AAY93348
AAY93348
AAR75186
AAY93357
AAY93351
AAY93353
                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412676
Human two-chain hi
Human high molecul
Light chain of hum
Light chain of hum
Partial peptide of
Light chain of hum
                                                                                                                                                                                                                     Description
```

98 93 71. 5 55 55 55 55 55 55 55 55 57 57 57 57 57
100.0 94.9 94.9 94.9 94.9 94.9 94.9 94.9
25 110 110 117 117 117 117 117 281 117 281 317 317 317 317 317 317 317 317 317 31
21 116 116 22 21 21 21 21 21 21 21 21 21 21 21 21
AAY93342 AAR751180 AAR751187 AAG01201 AAG01201 AAG23734 AAG23733 AAG49523 AAG49523 AAG49523 AAG49523 AAG49523 AAG49623 AAG43696
Light chain of hum partial peptide of Partial peptide of Human HKHZO peptide Human high molecul Arabidopsis thalia Arabidopsis canni KNI alanine scanni Lucilia cuprina GA

### ALIGNMENTS

RESULT AAY81999 ID AAY8

\_

AAY81999 standard; peptide;

16 AA

AAY81999;

```
XEXEXX
A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                    WPI; 2000-376483/32.
                                                                                                                                                                                                                                     Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
two-chain sist inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                 Human two-chain high molecular weight kininogen domain 5 fragment #8.
                                                                                                                      10-NOV-1998;
                                                                                                                                            05-NOV-1999;
                                                                                                                                                                                           WO200027866-A1.
                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                         16-OCT-2000 (first entry)
                                                                                 (UTEM ) UNIV TEMPLE.
(MCCR/) MCCRAE R K.
                                                                                                                                                                    18-MAY-2000
                                                             RK;
                                                                                                                     98US-0107833.
                                                                                                                                            99WO-US26419
```

0

```
RESULT
AAW07625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 16
                                               Claim 3;
                                                                                                                      Cell adhesion inhibitor - co
The present peptide, and its claimed fragments,
                                                                                                                                                                                       WPI; 1996-421988/42.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; high polymer; quininogen; L-chain; cell adhesion; cancer metastasis; platelet aggregation; inhibition; wound; inflammatory disease; arteriosclerosis; glomerular nephriti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence is derived from human two-chain high molecular weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells. HI or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting anglogenesis. Accounts in a number of disease states, such as tumour forms of the present sequence where the composition for inhibiting anglogenesis.
                                                                                           polymer quininogen L chain
                                                                                                                                                                                                                                                                                                                                                                                   13-AUG-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis methods.
                                                                                                                                                                                                                                   (SUMU ) SUMITOMO SEIYAKU KK
                                                                                                                                                                                                                                                                                                                                    28-SEP-1995;
                                                                                                                                                                                                                                                                                                                                                                                                              JP08208692-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW07625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW07625 standard; peptide; 20 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 high
                                               Page 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 29; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polymer quininogen L-chain derived peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 AA;
                                                                                                                 on inhibiting peptide(s), used comprises partial amino acid s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                     94JP-0259451
                                                                                                                                                                                                                                                                                                                                 95JP-0276418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note=
13.,20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                       14pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "claimed peptide (claim 6)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "claimed peptide (claim 1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              glomerular nephritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
                                                                                                                 sequence of human high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
  derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

D

Дb δÃ

are

```
RESULT
AAY81997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                      synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                                                                                                                           A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       residues 402-498 of the human high polymer quininogen L-chain. They are useful in cell adhesion, cancer metastasis or platelet aggregation inhibitors, and in wound, inflammatory disease, arteriosclerosis or glomerular nephritis treating agents. The present peptide was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                                                                                              The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with
                                                                                                                                                                                high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a
                                                                                                                                                                                             high affinity to endothelial cells, where it is cleaved to two-chain
                                                                                                                                                                                                                                                             Claim 13; Page 29; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                           McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200027866-AÎ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rheumatoid arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human high molecular weight kininogen domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY81997 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                       (UTEM ) UNIV TEMPLE.
(MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 khghghgkhknkgkkn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  al Similarity
16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0107833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fragment #6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
```

S

Sequence

28

Ä

Query Match

DВ

```
RESULT
AAY93345
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                         Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best
                                                                                                                        The present sequence represents a fragment of the light chain of huma high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. What where it is cleaved by plasma kallikrein into heavy and light chains analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                       Method for inhibiting endothelial cell proliferation, that inhibit endothelial cell migration \boldsymbol{\cdot}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                       Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Light chain of human high molecular weight kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93345 standard;
                                                                                                                inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                       (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                (/SUOM)
                                                                                                                                                                                                                                                                                                                                                                                                                            COLM/)
                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
 1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω
--
                                                                                                                                                                                                                                                                                                                                                                                                            ) DUPONT PHARM CO.
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
16; Conserv
                                                                                                                                                                                                                                                                                             Page 36; 41pp; English
                                                                                        47
                                                                                                                                                                                                                                                                                                                                                                                      Mousa AS
                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                        ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US26377.
                                                                                                                 of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                     100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47
                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                    Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                     4.7e-07;
                                                ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 21;
.8e-07;
                                                                                                                vitronectin.
                                                21;
                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                              Length 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 28;
                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                   using compound
                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                    human
                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
RESULT
AAR75186
ID AAR7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
AAY93348
ID AAY9
                                                                                            В
                                                                                                                    γ
                                                                                                                                                                                                                   밁
                                                                                                                                               Query Match
Best Local Similarity
Matches 16; Conser
                                                                                                                                                                                                                                        The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
AAR75186;
                        AAR75186 standard; peptide;
                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 6; Page 37; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\color{black}\boldsymbol{\cdot}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial plasma kallikrein; heavy chain; light chain; analogue; angiogenesi endothelial cell proliferation; endothelial cell migration; vitron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY93348 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (MOUS/) MOUSA A S.
                                                                                            40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             25
                                                                                                          1 KHGHGHGKHKNKGKKN 16
                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ر
ح
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           khghghgkhknkgkkn
                                                                                                                                                                                                                   62 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             40
                                                                                                                                                                                                                                                                                                                                                                                                                       English.
                         63
                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                               Score 98; DE
Pred. No. 6.3
D; Mismatches
                         Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
                                                                                                                                                            DB 21;
6.3e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; analogue; angiogenesis;
cell migration; vitronectin.
                                                                                                                                                                        Length
                                                                                                                                                Indels
                                                                                                                                                                           62
                                                                                                                                                0;
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell;
```

05-DEC-1995

```
AAY93347
                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                        ARR75186 is a partial peptide corresponding to human kininogen fragment 1, amino acids 458-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                             WO200027415-A2.
                                                                                                                                               Human; high molecular weight kininogen; plasma kallikrein; heavy chain; light chendothelial cell proliferation; endothel
                                                                                                                                                                                    Light chain of human high molecular weight kininogen analogue
(UTEM ) UNIV TEMPLE.
                                10-NOV-1998;
                                                    09-NOV-1999;
                                                                         18-MAY-2000
                                                                                                                             Synthetic
                                                                                                                                                                                                              04-SEP-2000
                                                                                                                                                                                                                                 AAY93347;
                                                                                                                                                                                                                                                    AAY93347 standard;
                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; bovine; growth promotion; fibroblast.
                                                                                                                   Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (FARH ) HOECHST JAPAN KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Partial peptide
                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                   fibroblasts.
                                                                                                                                                                                                                                                                         7
                                                                                                                  sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; Page 8; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                Ā
 PHARM CO
                                98US-0107844
                                                    99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93JP-0230616.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of
                                                                                                                                                                                                                                                    peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human HMW
                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                     83
                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kininogen
                                                                                                                                                                                                                                                                                                                                                       Score 98;
Pred. No.
                                                                                                                                               ninogen; glycoprotein; endothelial cell;
light chain; analogue; angiogenesis;
endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fragment
                                                                                                                                                                                                                                                                                                                                                     6.4e-07;
                                                                                                                                                                                                                                                                                                                                                                   DB 16;
                                                                                                                                                                                                                                                                                                                                                                 Length 63;
                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                vitronectin.
                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                            0
```

```
Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kbg glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for this interest of the contact of the invention of the contact 
Method for inhibiting endothelial cell proliferation, that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                             (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic.
Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  inhibiting endothelial cell proliferation. The compounds used for inhibiting angiogenesis. The compounds can also inhibit migration of endothelial cells to vitronectin.
                                                                   WPI; 2000-376306/32.
                                                                                                                 Colman
                                                                                                                                                                                                                                                                          10-NOV-1998;
                                                                                                                                                                                                                                                                                                                      09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY93351 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 5; Page 37; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for inhibiting endothelial cell proliferation, using compound
                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (COLM/) COLMAN W R. (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chain
                                                                                                                 WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16;
                                                                                                                                                           MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mousa AS
                                                                                                               Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                          98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                      99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  analogue of the light chain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                       using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    can also be
be used to
                    compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

```
RESULT
AAR75181
                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
 Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local :
                                                                                                          AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent componens. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                      \boldsymbol{A} wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                            Claim 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR75181 standard;
                                                                     Sequence
                                                                                                                                                                                                                                                                                          (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                                                                                     17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                       JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                  AAR75181
                                                                                                                                                                                                                                                                                                                                                                            28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Partial peptide of human HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                   1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      khghghgkhknkgkkn
                                                                                                                                                                                                                                                                                                                                                                                                                                                           treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; Page 39; 41pp; English
                                                                                                                                                                                           Page 7; 8pp;
                                                                     131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ã
                                                                                                                                                                                                                                                                                                                      93JP-0230616
                                                                                                                                                                                                                                                                                                                                                93ЛР-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                            agent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         weight; kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide; 131 AA
100.0%; S
100.0%; F
ative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                            Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76
                                                                                                                                                                                                                                                                                                                                                                                                                                                           human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ogen; fragment; 1.2; 1; 2; partial;
growth promotion; fibroblast.
 Score 98; DB 16;
Pred. No. 1.3e-06;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.5e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                           Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 94;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

RESULT 1
AAY93349
ID AAY9

AAY93349 standard; peptide; 186 AA

망 Ş

 $\omega$ 

khghghgkhknkgkkn

1 KHGHGHGKHKNKGKKN 16

Matches

Conservative

0

Indels

0,

Gaps

```
THE REPORT OF TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PA
PA
PA
PA
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΡN
                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                  The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to used for inhibiting angiognesis. The compounds can also be used to
                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 11; Page 40-41; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY93353 standard;
                                                                                                                                                                                                                                                       inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       109 khghghgkhknkgkkn
Local Similarity
nes 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 KHGHGHGKHKNKGKKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOUSA A S.
                                                                                                                                                                                    179 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179
Score 98; DB 21;
Pred. No. 1.8e-06;
Mismatches 0;
                                                               Length 179;
```

```
RESULT
AAY93342
       XXX EX DXXXX
                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                     Matches
  plasma
                  Human;
                                         Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                            The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to emotthelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to inhibiting angiogenesis. The compounds can also be used to inhibit the compounds of analogue and the compounds can also be used to the compounds.
                                                                         04-SEP-2000
                                                                                                                             AAY93342 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 9; Page 38; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (DUPO )
                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                     inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (DUPO ) DUPONT PHARM CO (COLM/) COLMAN W R. (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93349;
                                                                                                                                                                                                 40
                                                                                                                                                                                             2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
high molecular weight kininogen; glycoprotein; endothelial cell; kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    high molecular weight kininogen; glycoprotein; endothelial cell; kallikrein; heavy chain; light chain; analogue; angiogenesis; elial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                         186
                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US26377
                                                                                                                            protein;
                                                                                                                                                                                                                                                                  100
                                                                                                                                                                                                                                                                  .08
                                                                                                                                                                                                                                                                                 .08;
                                                                                                                             255
                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                 Score 98;
Pred. No.
                                                                                                                             A
                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                    1.9e-06;
hes 0;
                                                                                                                                                                                                                                                                                 DВ
                                                                                                                                                                                                                                                                                 21;
                                                                                                                                                                                                                                                                              Length 186;
                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vitronectin
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                     0
```

```
PR XXX
                                                                                                                                                                                               DX AC
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence represents the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can be used for inhibiting analogues. The method and the compounds can also be used for inhibiting analoguesis. The compounds can also be used to
17-SEP-1993;
                         17-SEP-1993;
                                                                                                                                          high molecular weight; kininogen;
                                                                                                                                                                  Partial peptide of
                                                                                                                                                                                             05-DEC-1995
                                                   28-MAR-1995
                                                                                                                              wound
                                                                                                                                                                                                                     AAR75180;
                                                                                                                                                                                                                                              AAR75180 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\hspace{1pt}	extstyle -}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (DUPO) DUPONT PHARM (COLM/) COLMAN W R. (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                       inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200027415-A2
                                                                                                                                                                                                                                                                                                             109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UTEM )
                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                     1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                             khghghgkhknkgkkn 124
                                                                                                                             treating
                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 3;
                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mousa AS
                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                             agent;
 93JP-0230616
                         93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US26377.
                                                                                                                                                                  HMW kininogen
                                                                                                                                                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41pp;
                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      င္ပ
                                                                                                                             bovine; growth promotion;
                                                                                                                                                                                                                                               41
                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                           Score 98; DB 21;
Pred. No. 2.6e-06;
                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                 fragment
                                                                                                                                          fragment; 1.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                               fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                       Length 255;
                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  high molecular
                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                               0
```

```
RESULT 14
AAR75178
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human kininogen fragments 1.2, 1 and 2, are use agent compsns. and act as the active component. useful in wound treating because they have on fibroblasts.
AAR75178 is a partial peptide corresponding fragment 1.2, amino acids 387-496. Partial human kininogen fragments 1.2, I and 2, are agent compsns. and act as the active compone
                                                                                                   WPI; 1995-158909/21.
                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                                                                                  high
                                                                                                                                         17-SEP-1993;
                                                                                                                                                                                                    JP07082172-A
                                                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                                                                                                                                                        05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                              AAR75178 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                     (FARH
                                                                                                                                                            17-SEP-1993;
                                                                                                                                                                                                                                                                                                                       wound treating
                                                                                                                                                                                                                                                                                                                                                     Partial peptide of HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (FARH ) HOECHST JAPAN
                                                                    wound treating agent contg. a ave growth promotion activity of
                                                                                                                                                                                                                                                                                                                                                                                                                                                               19 khghghgkhknkgknn 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۳
                                                                                                                                                                                                                                                                                                     taurus
                                                                                                                                                                                                                                                                                                                                 molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 7; 8pp; Japanese
                                                  Page 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                promotion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                       weight; kininogen;
agent; bovine; grov
                                                                                                                                        93JP-0230616
                                                                                                                                                             93JP-0230616
                                                                                                                                                                                                                                69
                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                 8pp;
                                                                                                                                                                                                                     /label=
                                                                                                                                                                                                                                                              /label=
                                                                                                                                                                                                                                         ′label= Val or Leu
                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94.9%;
93.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   줐
                                                 Japanese
                                                                                                                                                                                                                                                              Pro,
                                                                                                                                                                                                                    Lys or Arg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   because they have growth
                                                                                                                                                                                                                                                                                                                                                                                                               110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                       growth
                                                                     a partial peptide of kininogen of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                       fragment; 1.2; 1; 2; partial;
wth promotion; fibroblast.
 2, are use component.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 16;
2e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            al peptides of bovine and are used in wound treating mponent. The fragments are
 to bovine kininogen peptides of bovine and used in wound treating ent. The fragments are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The fragments are promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
RESULT 15
AAY71879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SXCC
    The patent discloses a method for preventing or treating a disorder CC resulting from the release of bradykinin in a mammal which produces CC a heparin-binding protein (HBP) that binds to a HBP antagonist. This CC method involves administration of a mammalian HBP antagonist (especially CC aprotinin) and/or monoclonal antibodies that bind to prekallikrein. CC Hininogen complexes in the HBP, to decrease the release of bradykinin cin the mammal. The antagonists of HBP (e.g. aprotinin) decrease the CC permeability of the endothelial cells and are used to prevent or treat CC disorders resulting from the release of bradykinin such as systemic CC inflammatory response syndrome, ischaemia reperfusion, anaphylaxis CC and/or allograft rejection. They are also used to treat adult CC respiratory distress syndrome.

CC The present sequence is HKH20 peptide which is derived from the CC domain 5 of human H-Kininogen (HK) protein (479-498 residues).

CC HKH20 treatment of endothelial cells inhibits or prevents the HBP-cc induced increase in permeability of the endothelial cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                               29-APR-1999;
06-MAY-1999;
01-OCT-1999;
                                                                                                                                                                                                                                                                                               Treating systemic inflammatory response syndrome, anaphylaxis and allograft rejection by modulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunosuppressive; vasotropic; prevention; treatment; bradykinin; aprotinin; H-kininogen; HK; systemic inflammatory response syndrome; pre-kallikrein; ischaemia reperfusion; anaphylaxis; allograft rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  useful in wound treating because they have growth promotion activity on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200066151-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human; heparin binding protein; HBP; antiinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human HKH20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY71879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY71879 standard;
                                                                                                                                                                                                                                                                                                                                                                                                      (NOVO ) NOVO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-APR-2000; 2000WO-DK00213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 KHGHGHGKHKNKGKKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          respiratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                            Ę,
                                                                                                                                                                                                                                                        Page 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                        NORDISK AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0132748.
99DK-0000613.
99DK-0001402.
99US-0157384.
                                                                                                                                                                                                                                                                                                                                                                            Lindbom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          distress syndrome;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peptide;
                                                                                                                                                                                                                                                        75pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94.9%;
93.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16
                                                                                                                                                                                                                                                                                                                                                                          Ļ
                                                                                                                                                                                                                                                        English.
                                                                                                                                                                                                                                                                                                                                                                          Bjorn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            domain 5 of H-Kininogen (479-498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HKH20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 16;
5.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 110
                                                                                                                                                                                                                                                                                                  ischaemia reperfusion, release of bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cardiovascular;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aa).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
SQ Sequence 19 AA;

Output Match

Best Local Similarity 87:5%; Score 71.5; DB 21; Length 19;

Best Local Similarity 87:5%; Pre No. 0.008; 1; Indels 1; Gaps 1;

Oy 1 RHGHGHKKKKKKK 16

Db 2 Hill; 111|11|11|11|11|

Search completed: July 6, 2001, 09:09:19

Job time: 125 sec
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                      A_Geneseq_0601:*

1: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*

2: /SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*

3: /SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:*

4: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*

5: /SIDS8/gcgdata/geneseq/geneseqp/AA1984.DAT:*

6: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*

7: /SIDS8/gcgdata/geneseq/geneseqp/AA1986.DAT:*

8: /SIDS8/gcgdata/geneseq/geneseqp/AA1987.DAT:*

9: /SIDS8/gcgdata/geneseq/geneseqp/AA1988.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
          10:
11:
12:
13:
14:
15:
16:
17:
17:
18:
19:
20:
21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     July
/SIDSB/gcgdata/geneseq/yeneseqp/AA1988.DAT:*

/SIDSB/gcgdata/geneseq/yeneseqp/AA1999.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1990.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1994.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA2000.DAT:*

/SIDSB/gcgdata/geneseq/geneseqp/AA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-437-912-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6, 2001, 09:09:19; Search time 113.68 Seconds (without alignments) 8.533 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       412676
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

11	10	9	80	7	6	υī	4	ω	2	_	Result No.
93	93	93	93	93	98	98	98	98	98	98	Score
94.9	94.9	94.9	94.9	94.9	100.0	100.0	100.0	100.0	100.0	100.0	% Query Match
131	83	63	62	47	255	186	179	94	28	16	Query Match Length
16	21	16	21	21	21	21	21	21	21	21	DB
AAR75181	AAY93347	AAR75186	AAY93348	AAY93345	AAY93342	AAY93349	AAY93353	AAY93351	AAY81997	AAB06337	SUMMARIES
Partial peptide of	Light chain of hum	Partial peptide of	Light chain of hum	Human high molecul	Human two-chain hi	Description					

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	
41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	42	42	42	43	43	43	43	44	44	46	57	65	70	70	74	
41.8	41.8	41.8	41.8	۳.			۲	۳	۲	41.8	2	2	2	2	۵.	۶.	2	٧.	2		۶.	ω.	ω	ω ·	ω	4	4		8	6	<u>.                                    </u>	71.4	75.5	
303	298	298	219	214	214	. 211	206	206	28	21	800	800	478	464	460	387	382	382	369	326	287	808	778	571	504	914	821	16	19	20	110	41	12	
21	21	21	21	21	21	21	21	21	9	H	22	22	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21.	21	17	16	16	21	
AAG31066	AAG50819	AAG07242	AAG31067	AAG50820	AAG07243	AAG31068	AAG50821	AAG07244	AAP81567	AAR04053	AAB65673	AAB71957	AAG05327	AAG40040	AAG05328	AAG38074	AAG40041	AAG05329	AAG38075	AAG40042	AAG38076	AAG30500	AAG30501	AAG30502	AAB18184	AAG42127	AAG42128	AAY81999	AAY71879	AAW07625	AAR75178	AAR75180	AAY81995	
	S	Arabidopsis thalia		Arabidopsis thalia	Human insulin acce		Novel protein kina	æ		Arabidopsis thalia	thal									Arabidopsis thalia		Arabidopsis thalia	dopsis thal	two-c			peptide	Partial peptide of	Human high molecul					

# ALIGNMENTS

```
PF PA XX PA 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
AAB06337
                                                                                                                                        WPI; 2000-376483/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   two-chain high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human two-chain high molecular weight kininogen domain 5 fragment #9
                                                                                                                                                                                                                                           McCrae RK;
                                                                                                                                                                                                                                                                                                                                    (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200027866-A1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB06337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB06337 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0107833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US26419.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
```

A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis

```
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is derived from human two-chain high molecular weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HKa) cleavage by plasma kallikrein. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells. HKa cor a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell composis. Peptides used in the composition may be recombinant peptides, or synthesis expansion, and so be chemically constructed by unitable so be chemically constructed by including and the provides, or synthesis expansion, and be chemically constructed by including endothelial cell application of the composition may be recombinant peptides, natural peptides, or synthesic peptides. They may also be chemically constructed by the process of the composition of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1997
high
high
                   The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain
                                                                                                                                                                   endothelial cell
                                                                                                         Claim 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; high molecular weight kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human high molecular weight kininogen domain
                                                                                                                                                                                                                                                                                                                 (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                        05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY81997 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim
                                                                                                                                                               pharmaceutical composition used to inhibit angiogenesis, inhibit ndothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ŋ
                                                                                                                                                                                                                                 2000-376483/32
                                                                                                                                                                                                                                                                             RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
16; Conser
                                                                                                       Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ä,
                                                                                                         29;
                                                                                                                                                                                                                                                                                                                                                                                980S-0107833
                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US26419
                                                                                                     52pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ΑA
(HKa) by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21;
2e-08;
plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fragment
kallikrein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16;
                 two-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 16
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\color{black} \cdot}
                                                                                                                                                                                                                                                                                    WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                    Colman WR,
                                                                                                                                                                                                                                                                                                                                                                      (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93351 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                      (MOUS/) MOUSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                          10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                domo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13 hknkgkkngkhngwkt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
16; Conser
                                                                                                                                                                                               Page 39; 41pp; English.
                                                                                                                                                                                                                                                                                                                    Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                      AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ÃÃ;
                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 98;
100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.6e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

ţ

```
RESULT
AAY93353
                                                                    H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSSS
Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                         The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kbg glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                        Claim 11; Page 40-41; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY93353 standard;
                                                                                                                                                                                                                                                                                                Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                            WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                       Colman
                                                                                                                                                                                                                                                                                                                                                                                                                          (DUPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                used for inhibiting angiogenesis. The compounds can also be used inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                        (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                (/SDOW
                                                                                                                                                                                                                                                                                                                                                                                                               (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hknkgkkngkhngwkt 84
                                                                                                                                                                                                                                                                                                                                                                     WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16;
  16;
               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                             DUPONT PHARM CO. COLMAN W R.
                                                                    179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94 AA;
100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                     Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                    ξ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           179
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 98;
Pred. No.
            Score 98; DB 21;
Pred. No. 2.4e-07;
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
 0
                         Length 179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

The state of the s

RESULT AAY93342 ID AAY9

σ

AAY93342 standard; protein; 255

A

Ş

Matches

Local Similarity nes 16; Conserv

Conservative

0;

Mismatches

Indels

0;

Gaps

0

밁

48

```
AAY93349
ID AAYS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X P X O O X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
Query Match
Best Local
                                                                                                    Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                        The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen; glycoprotein; endothelial plasma kallikrein; heavy chain; light chain; analogue; angiogenes; endothelial cell proliferation; endothelial cell migration; vitro
                                                          Sequence
                                                                                                                                                                                                                                                                                   Claim
                                                                                                                                                                                                                                                                                                               Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                       Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                 (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY93349 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93349;
                                                                                       inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                    (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9;
                                                                                                                                                                                                                                                                                  Page 38; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                      Mousa As
                                                            186 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US26377
                                                                                       of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peptide;
 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56
                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              186 AA
 Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          light chain; analogue; angiogenesis; endothelial cell migration; vitronectin
                                                                                       to vitronectin.
DB 21;
2.5e-07;
               Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell;
```

```
RESULT
AAY93345
ID AAY9
XX AAY9
AC AAY9
XY O4-5
XX Ligh
XX Uigh
XX Huma
KW Plass
KW endc
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence represents the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting and the light and the compounds can be used for inhibiting the contact of the compounds.
                                                                                       04-SEP-2000
            Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                          Light chain
                                                                                                                   AAY93345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                             AAY93345 standard;
                                                                                                                                                                                                                                                                                                                                                                                  inhibiting endothelial cell proliferation. The compounds used for inhibiting angiogenesis. The compounds can also inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93342;
                                                                                                                                                                                                                        117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (COLM/)
                                                                                                                                                                                                                                                 1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                            7
                                                                                                                                                                                                                     hknkgkkngkhngwkt 132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000-376306/32.
                                                                                                                                                                                                                                                                                 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WR, Mousa AS
                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DUPONT PHARM CO. COLMAN W R. MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                          255
                                                    of human high molecular weight kininogen fragment
cell proliferation; endothelial
                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 3; 41pp; English.
                                                                                      (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US26377.
                                                                                                                                             peptide;
                                                                                      entry)
                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                47
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                              Score
Pred.
                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                              98;
                                                                                                                                                                                                                                                                                           3.4e-07;
                                                                                                                                                                                                                                                                                                           DB 21;
cell migration; vitronectin
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                           Length 255;
                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                  can also be
be used to
                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                0,
```

Light 04-SEP-2000

chain

of.

high molecular weight kininogen

analogue

(first entry) human

Homo

sapiens.

Synthetic

WO200027415-A2

Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.

QY DЬ

 $\frac{\omega}{\omega}$ 

AAY93348 RESULT

8

AAY93348 standard;

peptide; 62

AA

```
Query Match
Best Local Similarity
                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                The present sequence represents a fragment of the light chain of human high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to emothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting emothelial cell proliferation. The method comprises contacting emothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting emothelial cell proliferation. The compounds can also be used to inhibiting angiogenesis. The compounds can also be used to inhibit the confidence of emothelial cells of the compounds can also be used to the third the compounds can also be used to the confidence of the compounds can also be used to the compounds can also be used to the compounds can be used to the compounds can also be used to the compounds can be used to the compounds can also be used to the compounds can be used to the compounds can also be used to the compounds can be used to the compounds can also be used to the compounds can be used to the compounds can also be used to the compounds can be used to the compounds can be used to the compounds can also be used to the compounds can b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration \, \cdot \,
                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                     inhibit migration of endothelial cells to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Page 36; 41pp;
                                                                                               15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ) UNIV TEMPLE.
) DUPONT PHARM (
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                        47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mousa AS
                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US26377.
                                                                                                                                       94.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 English.
                                                                                               0
                                                                                                                                       Score 93;
Pred. No.
                                                                                               Mismatches
                                                                                                                                       DB 21;
3.4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                         vitronectin.
                                                                                               0,
                                                                                                                                                                           Length 47,
                                                                                               Indels
                                                                                          0,
                                                                                               Gaps
                                                                                          0
```

```
RESULT
AAR75186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                        IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 6;
         A wound treating agent contg. a have growth promotion activity c
                                                                                                                                                                                                                                                                                                                                        AAR75186 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (UTEM )
                                                 WPI; 1995-158909/21
                                                                                                  17-SEP-1993;
                                                                                                                                                                                                                                                              Partial peptide of human HMW kininogen fragment 2.
                                                                                                                                                                                                                                                                                        05-DEC-1995
                                                                                                                                                                                                                                                                                                                 AAR75186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Colman
                                                                        (FARH ) HOECHST JAPAN KK
                                                                                                                         17-SEP-1993;
                                                                                                                                              28-MAR-1995
                                                                                                                                                                          JP07082172-A
                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                           wound treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                      48
                                                                                                                                                                                                                                                                                                                                                                                                                            1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                    hknkgkkngkhngwk 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WR, Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Page 37; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ã
                                                                                                  93JP-0230616
                                                                                                                         93JP-0230616
                                                                                                                                                                                                                          weight; kininog agent; bovine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US26377.
                                                                                                                                                                                                                                                                                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94.9%;
                                                                                                                                                                                                                                     kininogen;
                                                                                                                                                                                                                                                                                                                                        63 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 93;
Pred. No.
                                                                                                                                                                                                                          gen; fragment; 1.2; 1; 2; partial;
growth promotion; fibroblast.
           a partial peptide of kininogen of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
AAY93347
& x 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 x
                                                                                                                                                                                                                                                                                    XX
X
                                                                                                                                                                                                                                       XY
                                                                                                                                                                                                                                                                                                                                                                 PA
PA
PA
                                                                                                                                                                                                                                                                                                                                                                                                                                X PR X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8 x 00 00 00 x 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 15; Conserv
         Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                     The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains.
                                                                                                                                                                                                                      Claim 5; Page 37; 41pp; English.
                                                                                                                                                                                                                                                                                                     WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fragment 1, amino acids 458-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                   Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                 Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                 (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                              (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93347 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR75186 is a partial peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 8; Page 8; 8pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                 (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                               10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  49 hknkgkkngkhngwk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                               DUPONT PHARM CO. COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63 AA;
                                                                                                                                                                                                                                                                                                                                 Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94.9%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        corresponding to human kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 16;
4.5e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

SS

Sequence

83

Ŋ,

```
AAY81995
ID AAY8
XX AAY8
AC AAY8
XX The control of 
                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR75181
ID AAR
                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                   Human high molecular weight kininogen domain 5
                                                                                                                                                               AAY81995 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compons. and act as the active component. The fragments are useful in wound treating because they have growth promotion activit
                                                                        16-OCT-2000
                                                                                                                       AAY81995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                           117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        high molecular weight; kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Partial peptide of human HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR75181 standard; peptide; 131 AA.
                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                                                                                                                                        1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                        hknkgkkngkhngwk 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7; Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  treating
                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  agent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93JP-0230616.
                                                                                                                                                                                                                                                                                                                                                                                                             94.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94.9%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kininogen; fragment; 1.2; 1; 2; partial;
human; growth promotion; fibroblast.
                                                                                                                                                                 12 AA
                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                             Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                           DB 16;
9.6e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 21;
6e-07;
                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                      fragment #4.
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

Qy

0;

В

high molecular

ound,

treating

weight; kininogen; fragment; 1.2; 1; 2; partial;
agent; bovine; growth promotion; fibroblast.

Partial peptide of HMW kininogen fragment 2.

05-DEC-1995 AAR75180;

(first entry)

AAR75180 standard;

peptide; 41

JP07082172-A Bos taurus

```
AAR75180
                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising part or all of the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 10; Page 29; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen;
                                                                                                                                                                                                                                    Local Similarity
les 12; Conserv
                                                                                                                  ۳
                                                                                                                                                                       5 GKKNGKHNGWKT 16
                                                                                                               12
                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0107833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26419
                                                                                                                                                                                                                                                             75.5%;
                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                          Score 74;
Pred. No.
                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                          DB 21; 1
5.5e-05;
                                                                                                                                                                                                                                                                                         Length 12;
                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                 Gaps
```

```
RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       γ
                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
Claim 4; Page 6; 8pp; Japanese
                   {\bf A} wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                Misc-difference 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR75179 is a partial peptide corresponding to bovine kininogen fragment 2, amino acids 456-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active becomes the fragments are
                                                                                        17-SEP-1993;
                                                                                                           17-SEP-1993;
                                                                                                                                                   JP07082172-A
                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                    (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                     Bos taurus
                                                                                                                                                                                                                                                                                                    Partial peptide of HMW kiningeen fragment 1.2
                                                                                                                                                                                                                                                                                                                        05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                               AAR75178 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1995-158909/21.
                                                                                                                                                                                                                                                                                 high molecular weight; kininogen; fragment; 1.2; 1; 2; partial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (FARH ) HOECHST JAPAN KK.
                                                                                                                                                                                                                                                                                                                                                                                                                27
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                         1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                              hknkgknngkhydwr 41
                                                                                                                                                                                                                                                                        treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                         93JP-0230616
                                                                                                           93ЛР-0230616
                                                                                                                                                                                                                                                                       agent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93JP-0230616
                                                                                                                                                                                                                       Location/Qualifiers 12
                                                                                                                                                                       /label=
                                                                                                                                                                                        'label=
                                                                                                                                                                                                             'label=
                                                                                                                                                                                                                                                                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               71.48;
73.38;
                                                                     Š
                                                                                                                                                                                                                                                                       bovine; growth
                                                                                                                                                                                          ۷al
                                                                                                                                                                                                             Pro,
                                                                                                                                                                     Lys or Arg
                                                                                                                                                                                                                                                                                                                                                              110
                                                                                                                                                                                          or Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 70; Pred. No.
                                                                                                                                                                                                                                                                                                                                                               Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                       promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.00076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
RESULT 15
AAW07625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            *3333333*&
                                                                                                                                                                         X P P T X R
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                   ΧX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                          The present peptide, and its claimed fragments, are derived from residues 402-498 of the human high polymer quininogen L-chain are useful in cell adhesion, cancer metastasis or platelet aggregation inhibitors, and in wound, inflammatory disease, arteriosclerosis or glomerular nephritis treating agents. The present peptide was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR75178 is a partial peptide corresponding to bovine kininogen fragment 1.2, amino acids 387-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compons. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                     Cell adhesion inhibiting peptide(s), used as cancer metastasis
Sequence
                                                                                                                                                       Claim 3; Page 2; 14pp; Japanese.
                                                                                                                                                                                    inhibitor - comprises partial amino acid sequence of human high polymer quininogen L chain
                                                                                                                                                                                                                                                      WPI; 1996-421988/42.
                                                                                                                                                                                                                                                                                                                                                                                   13-AUG-1996
                                                                                                                                                                                                                                                                                                                                                                                                                  JP08208692-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW07625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW07625 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on fibroblasts.
                                                                                                                                                                                                                                                                                                                     28-SEP-1994;
                                                                                                                                                                                                                                                                                                                                                    28-SEP-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                кеу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           treatment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer metastasis; platelet aggregation; inhibition; wound;
inflammatory disease; arteriosclerosis; glomerular nephritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; high polymer; quininogen; L-chain; cell adhesion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human high polymer quininogen L-chain derived peptide
                                                                                                                                                                                                                                                                                    (SUMU ) SUMITOMO SEIYAKU KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96 hknkgknngkhydwr 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11;
20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          110 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
ΑA;
                                                                                                                                                                                                                                                                                                                     94JP-0259451
                                                                                                                                                                                                                                                                                                                                                    95JP-0276418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
13..20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers 1..13
                                                                                                                                                                                                                                                                                                                                                                                                                                                /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            71.4%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                "claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 70;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide (claim 6)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0.0021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (claim 1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inhibition; wound,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                       i from
in. They
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

Query Match

66.3%;

Score 65;

DΒ

17;

Length 20;

			Db 10 hknkgkkngkh 20 Search completed: July 6, 2001, 09:09:19 Job time: 125 sec	Best Local Similarity 100.0%; Pred. No. 0.002; Matches 11; Conservative 0; Mismatches 0; Indels Oy 1 HKNKGKKNGKH 11
				0;
				Gaps
				0;

```
Minimum DB :
                                                                                                                                                                                                                                                                          Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on:
                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq
         167
167
167
167
167
167
167
167
167
145
                                                                                                                                                                                                                                                                                                                                                                                                                                                               A_Geneseq_0601:*

1: /SIDSB/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDSB/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqp/AA1982.DAT:*
4: /SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
6: /SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDSB/gcgdata/geneseq/geneseqp/AA1986.DAT:*
8: /SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
9: /SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
9: /SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
11: /SIDSB/gcgdata/geneseq/geneseqp/AA1990.DAT:*
12: /SIDSB/gcgdata/geneseq/geneseqp/AA1990.DAT:*
13: /SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
14: /SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
15: /SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
16: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
17: /SIDSB/gcgdata/geneseq/geneseqp/AA1996.DAT:*
18: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
18: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
19: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
22: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
23: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
24: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
25: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
26: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length:
length:
                                                                                                                                                                                                                                                                     Query
Match
         100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
100.0
58.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-437-912-5
167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /SIDSB/gcgdata/geneseq/geneseqp/AA1989.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1990.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1994.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1990.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1997.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1998.DAT:*
/SIDSB/gcgdata/geneseq/geneseqp/AA1998.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HGHEQQHGLGHGHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                        Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6, 2001, 09:09:17; Search time 113.68 Seconds (without alignments) 14.932 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2000000000
         28
62
63
83
94
131
136
255
179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapext 0.
           21
21
21
21
21
21
                                                                                                                                                                                                                                                                          ij
                                                                    AAY81996
AAY93346
AAY93348
AAR75186
AAX93347
AAX93351
AAX93351
                             AAY93342
AAY93353
                                                                                                                                                                                                                                                                                                                                        SUMMARIES
Partial peptide of Light chain of hum Light chain of hum partial peptide of Light chain of hum Light chain of hum Light chain of hum Light chain of hum Light chain of hum
                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                              Human high molecul
Light chain of hum
Light chain of hum
```

is thal	AAG22953	21	453	2	54	45
Arabidopsis thalia		21	425	۲	54	44
Arabidopsis thalia		21	389	.2	54	43
Arabidopsis thalia		21	389		54	42
Arabidopsis thalia		21	309	2	54	41
Arabidopsis thalia		21	309		54	40
2000	AAU00027	22	792	.2	55	39
Partial peptide of		16	69	ω	56.5	38
Haemophilus influe		19	337	4.	57	37
Human high molecul		21	28		57.5	36
Human high polymer		17	20	5	60	<u>ω</u>
Arabidopsis thalia		21	398		0	34
Arabidopsis thalia		21	398	6	60.5	ω ω
thal		21	344		0	32
thal		21	344	6	0	31
thal		21	330	6.	0	30
Arabidopsis thalia		21	330	6.	0	29
of h		21	21	σ.	61	28
tha		21	776	8	64	27
Arabidopsis thalia		21	766	8	64	26
s thal		21	757	8	64	25
Arabidopsis thalia		21	278	9	66	24
Arabidopsis thalia		21	217	9.	66	23
Arabidopsis thalia		21	. 184	9	66	22
Human high molecul		21	12	0.	68	21
Light chain of hum		21	186	۲.	69	20
Light chain of hum		21	16	۳	69	19
Partial peptide of		16	68	1	70	18
Human high molecul		21	12	4	75	17
ō		17	20	7.	79	16
Partial peptide of	17	16	110	0	85	15
0	œ	16	41	0	85	14
Human high polymer	762	17	17	52.7	88	13
Human two-chain hi	199	21	16	ō	94	12

### ALIGNMENTS

RESULT AAY81996

 $\vdash$ 

AAY81996;

16-OCT-2000 (first entry)

AAY81996 standard; peptide;

28 AA

Human high molecular weight kininogen domain

ഗ

fragment #5

```
(UTEM )
A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                             WPI; 2000-376483/32.
                                                                                                                                                                                           Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                  05-NOV-1999;
                                                                                                                                                                          Homo sapiens.
                                                                                                 10-NOV-1998;
                                                                                                                                     18-MAY-2000.
                                                                                                                                                        WO200027866-A1
                                                                  UNIV TEMPLE.
MCCRAE R K.
                                                                                                 98US-0107833.
                                                                                                                  99WO-US26419.
```

```
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a composition for inhibiting angiogenesis. Angiogenesis coccurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation on by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a
                                        Claim 4; Page 36; 41pp; English
                                                                                                             WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                  Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                                    Method
                                                                                                                                        Colman WR, Mousa AS,
                                                                                                                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                      09-NOV-1999;
                                                                                                                                                                                                                                                                                                    18-MAY-2000
                                                                                                                                                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                         Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY93346 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 8;
                                                                                                                                                                   (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peptides, natural peptides, or synthetic peptides. They may also l
chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
                                                                    od for inhibiting en inhibit endothelial
                                                                                                                                                                                                                                                                                                                                                          sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 28; 52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                             98US-0107844
                                                                                                                                                                                                                                                                      99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                   endothelial cell
ial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 167; DB 2
Pred. No. 2e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                 proliferation, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28;
                                                                                 compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
```

```
RESULT
AAY93348
ID AAY9
 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 28
           The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting engothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used for inhibiting engothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                               (DUPO)
                                                                                                                                                                                                                                                                                                   Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic.
Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; high molecular weight kininogen; glycoplasma kallikrein; heavy chain; light chain;
                                                                                                                                                                                                                       that inhibit endothelial cell migration
                                                                                                                                                                                                                                  Method for inhibiting endothelial cell proliferation, using compound
                                                                                                                                                                                                                                                                    WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                               09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY93348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY93348 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                  10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                  (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hgheqqhglghghkfkldddlehqgghv
                                                                                                                                                                                        6;
                                                                                                                                                                                                                                                                                                                                               ) UNIV TEMPLE.
) DUPONT PHARM CO.
) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
28; Conserv
                                                                                                                                                                                                                                                                                                                                MOUSA A S.
inhibiting angiogenesis.
                                                                                                                                                                                        Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55
                                                                                                                                                                                                                                                                                                   Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                        37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A,
                                                                                                                                                                                                                                                                                                                                                                                                                98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proliferation;
                                                                                                                                                                                   41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                    English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 167; DB 21;
Pred. No. 4.3e-17;
, Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     light chain; analogue; angi
endothelial cell migration;
 compounds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 glycoprotein; endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55,
 used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
AAR75186
ID AAR7
XX AAR7
XX O5-C
XX Part
XX high
KW woun
XX WOUN
XX JP07
XX JP07
XX JP07
XX WP1
XX WP1
XX WP1
XX WP1
XX A WP1
XX 
AAY93347
ID AAY9
XX
AC AAY9
XX
DT 04-S
XX
                                                                                                                                                                              Qy
                                                                                                       RESULT
                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SXC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
               04-SEP-2000
                                             AAY93347;
                                                                        AAY93347 standard;
                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                 fragment 1, amino acids 458-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                AAR75186
                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       A wound treating agent contg. a partial peptide have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR75186 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Partial peptide of human HMW kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibit migration
                                                                                                                                                    σ
                                                                                                                                                                   1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                       fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                       Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4
                                                                                                                                                    hgheqqhglghghkfkldddlehqgghv 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 treating
                                                                                                                                                                                                              100 28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                             is a partial peptide corresponding to human kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                            Page
                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
              (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                         A,
                                                                                                                                                                                                                                                                                                                                                                                                                            8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 weight; agent; k
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                            gpp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide;
               entry)
                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                            Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Κ.
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bovine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .0%;
                                                                          83
                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                            Score 167; DB 1
Pred. No. 5e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 167; DB 21;
Pred. No. 4.9e-17;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 growth
                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fragment;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 promotion;
                                                                                                                                                                                                                                         DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.2;
                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; 1; 2; partial; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ب</u>
                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                            63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62;
                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                    activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                          RESULT
AAY93351
В
                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                           PA
PA
PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X P X S S S X K K X X E
                                                                                                                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                             Query Match
                          Synthetic
                                                                                                                                                  04-SEP-2000
                                                                                                                                                                                AAY93351;
                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 5;
            Homo sapiens
                                                                                                                                                                                                              AAY93351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                        26
                                                                                                                                                                                                                                          σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page
                                                                                                                                                                                                                                                                                                                                                                                                                           83
```

```
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
plasma kallikrein; heavy chain;
endothelial cell proliferation;
  Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                           Light chain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity hes 28; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                       COLMAN W R.
                                                                                                                                                                                                                                                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
llarity 100.0%;
Conservative (
                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ą.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41pp;
                                                                                                                                                                                                                                                                                             peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        င္ပ
                                                                                                                        high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English.
                                                                                                                                                                                                                                                                                                   94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 167; DB 21;
Pred. No. 6.8e-17;
                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                          53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                     analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83;
        vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
AAR75181
ID AAR7
ACC XXX ACC XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 28
                                                                                                                                                                                                                                                         JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cells with method and the compounds can be used for the inhibition.
                                               (FARH ) HOECHST JAPAN KK
                                                                                                                                                    17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Partial peptide of human HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75181 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                  17-SEP-1993;
                                                                                                                                                                                                         28-MAR-1995
                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (DUPO ) DUPONT PHARM CO. (COLM/) COLMAN W R. (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    W0200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7
                                                                                                                                                                                                                                                                                                                                                           molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8; Page 39; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 100.
28; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                           weight; agent; h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA:
                                                                                                  93JP-0230616
                                                                                                                                                    93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide; 131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                              human;
                                                                                                                                                                                                                                                                                                                                                                                      kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                           growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 167; DB 21; Pred. No. 7.8e-17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                   fragment;
                                                                                                                                                                                                                                                                                                                                                           promotion;
                                                                                                                                                                                                                                                                                                                                                           1.2; 1; 2; par on; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                partial;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsus. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                        Claim
                                                                                                                                                            we choose that inhibit endothelial cell proliferation, using compound that inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                          WPI; 2000-376306/32.
                                                                                                                                                                                                                                     Colman WR,
                                                                                                                                                                                                                                                                          (UTEM )
(DUPO )
(COLM/)
                                                                                                                                                                                                                                                                                                                                                          09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 7;
                                                                                                                                                                                                                                                                                                                                 10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                   18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                           WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY93349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             wound treating agent contg. a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                growth promotion activity
                                                                                                                                       9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28;
                                                                                                                                                                                                                                                                          DUPONT PHARM COLMAN W R.
                                                                                                                                                                                                                                                                                                     UNIV TEMPLE
                                                                                                                                                                                                                                                               MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page
                                                                                                                                       Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131 AA;
                                                                                                                                                                                                                                     Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                       38;
                                                                                                                                                                                                                                                                                                                               98US-0107844
                                                                                                                                                                                                                                                                                                                                                        99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            proliferation;
                                                                                                                                      41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peptide;
                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Japanese
                                                                                                                                      English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 167; DB 16;
Pred. No. 1.1e-16;
D; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a partial peptide of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY93342
Query Match
Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                        The present sequence represents the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                  Sequence
                                                                                                                                                                                                                                                                                                   Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                             WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                        Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93342;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY93342 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                   (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
 28; Conser
                                                                                                                                                                                                                                                                                                                                                                                                               DUPONT PHARM
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                   MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186 AA;
                                                                  255
 Conservative
                                                                                                                                                                                                                                                                        Page 3; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                       Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of human high molecular weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
100.0%; ; 1
100.0%; ; tive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                              ဗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
Score 167; DB 21;
Pred. No. 2.4e-16;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 167; DB 21;
Pred. No. 1.7e-16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                         255;
                                                                                                                                                                                                                                              high molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

RESULT 1 AAY93345

H

AAY93345 standard; peptide; 47

A

밁 Š

Matches Query Match

4

EQQHGLGHGHKFKLDDDLEHQGGHV 28

eqqhglghghkfkldddlehqgghv

25

Local

ch 86.8%; So similarity 100.0%; 125; Conservative 0;

Score 145; DB 21; Pred. No. 2.3e-13;

Length Indels

179; 0;

Gaps

0

Mismatches

```
DR XXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                              PA PA PA XX
                                                                                                                                                                                                                                                                                                                                                                                                                 PR
                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                      The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kbm glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                     (DUPO)
Sequence
                                                                                                                                                                                                                     Claim 11; Page 40-41; 41pp; English.
                                                                                                                                                                                                                                                  Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration \cdot
                                                                                                                                                                                                                                                                                                                          Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            endothelial cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; high molecular weight kininogen;
plasma kallikrein; heavy chain; light cl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-SEP-2000
                            inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY93353
                                                                                                                                                                                                                                                                                                                                                        (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGHEQOHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                     UNIV TEMPLE.
DUPONT PHARM CO.
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                       MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        standard;
179 AA;
                                                                                                                                                                                                                                                                                                                          Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of human high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          n; heavy chain; proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          light chain; analogue; angiogenesis;
endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       glycoprotein; endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   analogue
```

```
RESULT 12
AAY8198
ID AAY819
XX AAY819
XC AAY819
XX I6-OCT
XX LUMAN
XX HUMAN
XX HUMAN;
                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                     Query Match
Best Local
                              Human two-chain high molecular weight kininogen domain 5 fragment #7
                                                                                                                        AAY81998 standard;
                                                                                                                                                                                                                                                                                                                                                       The present sequence represents a fragment of the light chain of huma high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                               16-OCT-2000
                                                                                           AAY81998;
                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 3; Page 36; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Light chain of human high molecular weight kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                           12 GHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                            high molecular weight kininogen; HK,
                                                                                                                                                                                                                                                       l Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                 47
                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                 ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US26377.
                                                                                                                       peptide;
                                                                                                                                                                                                                                                  58./
100.0%; F1
                                                                                                                        16
                                                                                                                                                                                                                                                                     Score 98; ; Pred. No.
                                                                                                                        ΑA
                                                                                                                                                                                                                                                                     DB 21; 1
2.8e-07;
                                                                                                                                                                                                                                                                                   Length 47;
                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human
                                                                                                                                                                                                                                                       0;
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PR XX PA XX 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence is derived from human two-chain high molecular weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting anglogenesis. Anglogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may joint destruction by inhibiting endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation the composition may be recombinant peptides, and tural peptides, or synthetic peptides. They may also be chemically extracted using for example cells become where the stated.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
28-SEP-1995;
                                                            13-AUG-1996
                                                                                                                               JP08208692-A.
                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                           Human; high polymer; quininogen; L-chain
                                                                                                                                                                                                                                                                                                                       Human high polymer quininogen L-chain derived
                                                                                                                                                                                                                                                                                                                                                                                       04-FEB-1997 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW07627;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW07627 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       synthesised, using, for example,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12 GHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ghkfkldddlehqggh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Page 28; 52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0107833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 94; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       solid phase synthesis methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 21;
. 3.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

0,

95JP-0276418

```
RESULT
AAR75180
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 14; Conserv
                             ARR75179 is a partial peptide corresponding to bovine kininogen fragment 2, amino acids 456-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
Sequence
                                                                                                              Claim
                                                                                                                                   A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                          WPI; 1995-158909/21.
                                                                                                                                                                                                                           17-SEP-1993;
                                                                                                                                                                                                                                                                              28-MAR-1995.
                                                                                                                                                                                                                                                                                                      JP07082172-A.
                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                     high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; bovine; growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                            Partial peptide
                                                                                                                                                                                                                                                                                                                                                                                                                      05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR75180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR75180 standard; peptide; 41 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present peptide is derived from residues 402-498 of the human high polymer quininogen L-chain. It was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example; Page 8; 14pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cell adhesion inhibiting peptide(s), used as cancer metastasis inhibitor - comprises partial amino acid sequence of human high polymer quininogen L chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-SEP-1994;
                                                                                                                                                                                                 (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                    17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (SUMU ) SUMITOMO SEIYAKU KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGHEQQHGLGHGHK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1996-421988/42
                                                                                                              6;
                                                                                                          Page 7; 8pp; Japanese.
41 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                           93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94JP-0259451
                                                                                                                                                                                                                                                    93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                          of HMW kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52.7%; but
100.0%; Pr
'" 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 88;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                            fragment 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 17; 1
2.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

Query Match Best Local Similarity

50.9%;

Score 85; Pred. No.

DB 16; 1.7e-05;

Length

Search completed: Job time: 124 sec

July

6

2001, 09:09:18

```
AAR75178
ID AAR
                                                                                               SXCCCCCXS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
   В
                     Ş
                                                                                                                                                                                                         XX
                                                                                                                                                                                                                                        DR XX
                                                                                                                                                                                                                                                                                                                                                    XX
                                                                                                                                                                                                                                                                                                                                                                          XX FFFFFFF FXX SO XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                          Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                            AAR75178 is a partial peptide corresponding to bovine kininogen fragment 1.2, amino acids 387-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                               Sequence
                                                                                                                     on fibroblasts.
                                                                                                                                                                                               Claim
                                                                                                                                                                                                                   A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                    WPI; 1995-158909/21.
                                                                                                                                                                                                                                                                                                                                        28-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                  Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        high molecular weight;
wound treating agent; !
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Partial peptide of HMW kininogen fragment 1.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR75178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR75178 standard; peptide;
                                                                                                                                                                                                                                                                         (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                                              17-SEP-1993;
                                                                                                                                                                                                                                                                                                                  17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                             JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                            Local Similarity
nes 15; Conserv
   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Н
                       1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
hghqkqhglghghk-----hghgh
                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15;
                                                                                                                                                                                              Page 6; 8pp;
                                                                                               110 AA;
                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                /label=
, 15
                                                                                                                                                                                                                                                                                               93JP-0230616
                                                                                                                                                                                                                                                                                                                    93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                            69
                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                               /label= Lys or Arg · :
                                                                                                                                                                                                                                                                                                                                                                                                      label= Val or
                                                      50.9%;
                                                                                                                                                                                             Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bovine; growth promotion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                           Pro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           110
                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                      Score 85; DB 16; Pred. No. 5.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                       Leu
                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
   93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fragment;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2
                                                                Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; 1; 2; partial; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                             Indels
                                          8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8;
                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
```

THIS PAGE BLANK (USPTO)

GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
A_Geneseq_0601:*

1: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:*
4: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
6: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
8: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
9: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
10: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
11: /SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
12: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
13: /SIDS8/gcgdata/geneseq/geneseqp/AA1992.DAT:*
14: /SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
15: /SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
16: /SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
17: /SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*
18: /SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
19: /SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
20: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
22: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
23: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
24: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
25: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
26: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
27: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
28: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
29: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length: 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-437-912-7
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6, 2001, 09:09:18; Search time 113.68 Seconds (without alignments) 8.533 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  412676
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

ä	
z	
35	
4	
Ĥ	
덧	
<b>U</b> 2	

1 - 1 - 1 - 1 - 1	Query Ouery Score Match Length DB ID	AAY81998	100.0 28 21 AAY81996	100.0 47 21 AAY93345	100.0 55 21 AAY93346	100.0 62 21 AAY93348	100.0 63 16 AAR75186	100.0 83 21 AAY93347	100.0 94 21 AAY93351	100.0 131 16 AAR75181	100.0 179 21 AAY93353	100 0 100 01 333000
-------------------	--------------------------------------------	----------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	-----------------------	-----------------------	---------------------

442 443 544	. 20 20 20 20 20 20	3332	30 31	21 22 24 25 26	12 13 14 15 16 16 17 17 18
4444 0000	4444	44000	41 40 40	44444 4111333	444446754 4433344
42.6 42.6 42.6	422.66				100.0 79.8 68.1 47.9 45.7 45.7 45.7 45.7
1004 1004 1025 1035 1079	278 317 317 413	195 217 238 248	1477 1477 1477 46 184	135 135 135 135 477 951	255 20 12 631 57 107 107
20 20 20 20	19 21 21	20 21 22 21	18 20 21	18 21 21 21 21	21 21 21 21 18 18 20 20
		AAY17952 AAG28213 AAB61611 AAB41673	AAW10424 AAW106819 AAB56230 AAG28214	AAW30891 AAY2504 AAY22910 AAB60659 AAB42919 AAB42919	AAY93342 AAW07628 AAY19193 . AAY79183 AAW27561 AAW27561 AAW27561 AAW49535
Human kidney hkNBC Human pancreas hpN Serum opacity fact Rat NBC protein Human heart hhNBC	Arabidopsis thalla Human ATG-1709 pro Human secreted apo Human ORFX ORF1610 Human NBC protein.	Partial murine mfz Arabidopsis thalia Human protein HPO3 Human ORFX ORF1437	Saccharomyces cere Fumonosin-resistan Human secreted pro Arabidopsis thalia	Human cytostatin I Human cytostatin I Human retinoid bin Human cellular ret Human ORFX ORF2683 Protein regulating	Light chain of hum Human high polymer Human high molecul Haematopoietic ste Human secreted pro Human cytostatin I Human cytostatin I Human cytostatin i

### ALIGNMENTS

```
RESULT
AAY81998
              ID ACC XXX ACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; high molecular weight kininogen; HK;
two-Chain high molecular weight kininogen; HKa;
anglogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                            WPI; 2000-376483/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human two-chain high molecular weight kininogen domain 5 fragment #7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY81998 standard; peptide;
                                                                                                                                                                                                                                  McCrae RK;
                                                                                                                                                                                                                                                                                                                         (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200027866-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY81998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0107833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₿
```

```
CCCCCCXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
AAY8199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a
                                                                                                  Claim
                                                                                                                                                    A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                   WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence is derived from human two-chain high molecular weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell approach section of synthetic peptides. They may also be chemically expressed in the composition for the beautiful cell in the composition of the composition of the composition of the composition may be recombinant peptides.
                                                                                                                                                                                                                                                                                                                                                 10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                         05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human high molecular weight kininogen domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY81996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY81996 standard;
                                                                                                                                                                                                                                                                                        (UTEM ) UNIV TE (MCCR/) MCCRAE
                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; high molecular weight kininogen; HK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             synthesised, using,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                          UNIV TEMPLE. MCCRAE R K.
                                                                                                Page 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.
nilarity 100.
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,
                                                                                                                                                                                                                                                                                                                                                 98US-0107833
                                                                                                                                                                                                                                                                                                                                                                                       99WO-US26419
                                                                                              52pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for example, solid phase synthesis methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 1.2e-09; ches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
RESULT
AAY93345
ID AAY9
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 16
high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for
                                                                                                                                                                          Claim 3; Page 36; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                      WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                     Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                               10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                              09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                  (UTEM ) UNIV TEMPLE
(DUPO ) DUPONT PHARN
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                    (/SUOM)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY93345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        iomo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
nes 16; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GHKFKLDDDLEHQGGH 16
                                                                                                                                          present sequence represents a fragment of the light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ghkfkldddlehqggh
                                                                                                                                                                                                                                                                                                                                  DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                    MOUSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standard;
                                                                                                                                                                                                                                                                                     Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                    ➣
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                               98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US26377.
                                                                                                                                                                                                                                                                                                                    s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2.2e-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                            of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

```
AAY93346
ID AAY9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                        The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting anglogenesis. The compounds can also be used for inhibiting anglogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                  Sequence
                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                 Method
                                                                                                                                                                                                                                                                                                          WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                         (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                            10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY93346 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inhibiting endothelial cell proliferation. The compounds used for inhibiting angiogenesis. The compounds can also inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                            (Mous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4
                                                                                                                                                                                                                                                                  od for inhibiting endothelial cell proliferation, using inhibit endothelial cell migration .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ghkfkldddlehqggh 16
                                                                                                                                                                                                                                            4;
                                                                                                                                                                                                                                                                                                                                  WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         high molecular weight kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16;
                                                                                                                                                                                                                                                                                                                                                                      DUPONT PHARM CO.
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                            MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                          Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             likrein;
                                                  55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              47
                                                                                                                                                                                                                                                                                                                                 Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                  Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₹,
                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cular weight kininogen; glycoprotein; endothelial cell;
n; heavy chain; light chain; analogue; angiogenesis;
proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                         41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.
                                                                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 94; DB 21,
Pred. No. 4.1e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
DB 21;
4.9e-09;
            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                can also be be used to
                                                                                                                                                                                                                                                                              compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
RESULT
AAY93348
ID AAY9
XX AAY9
AC AAY9
AC AAY9
XX DE Ligh
XX Humm
KW Plas
KW Plas
KW Plas
KW endc
XX Synt
OS Homc
XX W020
  B
                       δÃ
                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qγ
                                                                   Query Match
Best Local
                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                           The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                           Claim 6;
                                                                                                                                                                                                                                                                                                                                                   Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration \,
                                                                                                                                                                                                                                                                                                                                                                                                                      Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY93348;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93348 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MOUS/) MOUSA A S.
 16
                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
                         1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 G
ghkfkldddlehqggh
                                                      l Similarity
16; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                           Page
                                                                                                                       62
                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                      Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                           37; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide;
                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52
                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                Score 94; DB 21;
Pred. No. 5.6e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ą
                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                           Length 62;
                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                    0;
                                                                                                                                                                                                                                                                                                                                                                  compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                    0;
```

RESULT AAR75186

```
RESULT
AAY93347
                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
 10-NOV-1998;
                      09-NOV-1999;
                                                                 WO200027415-A2
                                                                                                Synthetic.
                                                                                                                   plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                               Human; high molecular weight kininogen;
plasma kallikrein; heavy chain; light cl
                                                                                                                                                            Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                    04-SEP-2000
                                                                                                                                                                                                         AAY93347;
                                                                                                                                                                                                                             AAY93347
                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                               agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                            18-MAY-2000.
                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                          on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR75186 is a partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             high molecular wound treating
                                                                                                                                                                                                                                                                                                                                                                                                                           AAR75186 is a partial peptide corresponding to human kininogen fragment 1, amino acids 458-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compones, and act as the active component. The fragments are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Partial peptide of human HMW kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR75186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR75186 standard;
                                                                                                                                                                                                                                                                                     17
                                                                                                                                                                                                                                                                                                        1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                    7
                                                                                                                                                                                                                                                                                  1995-158909/21.
                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                              standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page 8;
                                                                                                                                                                                                                                                                                                                                                                                     63
                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                     AA;
98US-0107844
                     99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              agent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         weight;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gpp;
                                                                                                                                                                                                                              peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide; 63 AA
                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bovine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         kininogen;
                                                                                                                                                                                                                              83
                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                          Score 94; DB 10,...
Pred. No. 5.7e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            growth
                                                                                                                                                                                                                              AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fragment;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           agment; 1.2; 1; 2; partial;
promotion; fibroblast.
                                                                                                                               chain;
                                                                                                                                        glycoprotein;
                                                                                                                                                                                                                                                                                                                                                 Length 63;
                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                        endothelial cell;
                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                              0;
```

```
RESULT
AAY93351
ID AAYS
XX
DE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 16; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                        Colman WR,
                                                                                                                                                                                                                                                             Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                    10-NOV-1998;
                                                                                                                                             09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                              04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                         AAY93351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   that
                                                               (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                                                                 Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                                                        18-MAY-2000
                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                   AAY93351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                    MOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Method for inhibiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                            φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  od for inhibiting endothelial cell proliferation, using compound inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ghkfkldddlehqggh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                    MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mousa AS
                        Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,
                                                                                                                    98US-0107844
                                                                                                                                             99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41pp;
                                                                                                                                                                                                                                                                                                                                                                                                peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                              G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          င္ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       English.
                                                                                                                                                                                                                                                                                                                                                                                                   94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 94; DE
Pred. No. 7.8
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 to vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .8e-09;
s 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                   analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

0,

WPI; 2000-376306/32

```
RESULT
AAR75181
ID AAR7
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                     agent compsns. and useful in wound tre
                          on fibroblasts.
                                                                                                                       Claim 7;
                                                                                                                                                                                                                  (FARH ) HOECHST JAPAN
                                                 fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compones. and act as the active component. The fragments are
                                                                                                                                                                                                                                                                                                                          JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR75181 standard; peptide; 131-AA
                                                                                            AAR75181
                                                                                                                                                                                                                                                                      17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                             wound treating
                                                                                                                                                                                                                                                                                                                                                                                          high molecular
                                                                                                                                                                                                                                                                                                                                                                                                                     Partial peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                              fragment 1.
                                                                                                                                                                                                                                                                                              28-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibit migration of endothelial cells to vitronectin.
                                                                                                                                             wound treating agent contg. a partial peptide of kininogen ave growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                         1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                             is a partial peptide corresponding 1.2, amino acids 390-520. Partial
                                                                                                                    Page 7; 8pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                            93JP-0230616
                                                                                                                                                                                                                                                                      93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                             agent;
                                                                                                                                                                                                                                                                                                                                                                                          weight; kininogen;
                                     treating
                                                                                                                                                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                                                                     human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                  KK
                                                                                                                                                                                                                                                                                                                                                                             human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English.
                                       because they
                                                                                                                                                                                                                                                                                                                                                                                                                     HMW kininogen fragment 1.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                            ogen; fragment; 1.2; 1; 2; partial;
growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                       have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                     growth promotion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21;
                                                                                         to human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                             kininogen
of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94
                                       activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

Sequence

131

A

망 Qy

ب 9

GHKFKLDDDLEHQGGH 16 ghkfkldddlehqggh

```
RESULT 10
AAY93353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                      The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kbm glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                 Sequence
                                                                                                                                                                                                                                                                    Claim 11;
                                                                                                                                                                                                                                                                                                                                                                  Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; high molecular wei
plasma kallikrein; heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Light chain of human high molecular weight kininogen analogue.
                                                                                                                                                                                                                                                                                             Method for inhibiting endothelial cell proliferation, that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                       WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                          (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY93353 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ghkfkldddlehqggh 100
 16;
                                                                                                                                                                                                                                                                                                                                                                  WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                   Page 40-41; 41pp; English
                                                                   179 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      molecular weight kininogen; glycoprotein; ikrein; heavy chain; light chain; analogue.
Conservative
                                                                                                                                                                                                                                                                                                                                                                  Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ikrein; heavy chain; light chain; analogue; angiogenesis;
cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide;
            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
Score 94; DB
Pred. No. 1.9
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
            ; DB 21;
. 1.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 1.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 16;
 0;
                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 131;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                             using compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     endothelial
 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cell;
0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
AAY93349
ID
                                                                            AAY93342
ID AAYS
                                                                                                                                                                                                                                                                    δÃ
 EXTXXX
                                                                                                        RESULT
                                                                                                                                               B
                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                       The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
 Light chain
                           04-SEP-2000
                                                     AAY93342;
                                                                            AAY93342 standard;
                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY93349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY93349 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (DUPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200027415-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UTEM ) UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COLM/
                                                                                                                                               16
                                                                                                                                                                                                              Local Similarity
                                                                                                        12
                                                                                                                                                                        \vdash
                                                                                                                                             ghkfkldddlehqggh 31
                                                                                                                                                                       GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               9; Page 38; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DUPONT PHARM CO. COLMAN W R. MOUSA A S.
                                                                                                                                                                                                                                                                  186 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mousa AS;
 of
                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                          (first entry)
human high molecular weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US26377
                                                                              protein;
                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               186
                                                                                                                                                                                                  0
                                                                              255
                                                                                                                                                                                                              Score 94;
Pred. No.
                                                                              Ą
                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                              2e-08;
                                                                                                                                                                                                                            DВ
                                                                                                                                                                                                                            21;
                                                                                                                                                                                                  0
                                                                                                                                                                                                                         Length 186;
                                                                                                                                                                                                  Indels
                                                                                                                                                                                                  0,
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                  0;
```

```
AAW07628
ID AAW(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence represents the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the high molecular and the compounds can be used for the property of the compounds can be used for the property of the compounds can be used for the property of the compounds can be used for the property of the compounds can be used for the property of the compound containing the compounds can be used for the property of the compound containing the containing the compound containing the containing t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen analogues. The method and the compounds can be inhibiting endothelial cell proliferation. The compounds used for inhibiting angiogeness. The compounds can also used for inhibiting angiogeness.
                                                                                                                                                                                                                                                                          04-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
28-SEP-1995;
                                             13-AUG-1996
                                                                                          JP08208692-A.
                                                                                                                                                                                Human; high polymer;
                                                                                                                                                                                                                             Human high polymer quininogen L-chain derived peptide
                                                                                                                                                                                                                                                                                                                          AAW07628;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Page 3; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                     AAW07628 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   that inhibit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85
                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ghkfkldddlehqggh 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for inhibiting endothelial cell proliferation, using compound whibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ä
95JP-0276418.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                     peptide;
                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                quininogen; L-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                     20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                     Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .8e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           can also be
be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

```
RESULT :
 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 13
        The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising part or all of the present
                                                                                 Claim
                                                                                                                  A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                05-NOV-1999;
                                                                                                                                                                                                                                                                                                               WO200027866-A1.
                                                                                                                                                                                                                                                                                         18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                        two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present peptide is derived from residues 402-498 of the human high polymer quininogen L-chain. It was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cell adhesion inhibiting peptide(s), used as cancer metastasis inhibitor - comprises partial amino acid sequence of human high
                                                                                                                                                                                 McCrae RK;
                                                                                                                                                                                                     (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                          10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                      Human high molecular weight kininogen domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY81993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY81993 standard; peptide; 12 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OMUS)
sequence may be used in
                                                                                                                                                                                                                                                                                                                                                              rheumatoid arthritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-SEP-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ـــا
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4 FKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ||||||||||||||
|fkldddlehgggh 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1996-421988/42
                                                                                                                                                         2000-376483/32
                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                high molecular weight kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 quininogen L chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMITOMO SEIYAKU
                                                                                 Page 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Page 8; 14pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                          98US-0107833
                                                                                                                                                                                                                                                                99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94JP-0259451.
                                                                               52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   79.8%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                              endothelial
a pharmaceutical composition
                                                                                English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 75;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                             cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 17; I
2.6e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                         ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                        fragment #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
for inhibiting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

```
AAY79183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 11
The present sequence is that of a mouse haematopoietic stem cell (HSC) specific protein. It is an example of claimed HSC-specific proteins (see AAY9176-93) predicted from novel isolated HSC-specific nucleic acids (see AAZ94077-131). The HSCs are especially primitive HSCs (PHSCs) such as umbilical cord cells, bone marrow cells and foetal liver cells. The encoded proteins are growth factors, transport proteins, translation factors or replication factors that modulate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It calso occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid
                                                                                                                       Claim 21;
                                                                                                                                            Hematopoietic stem cell signaling proteins modulating replication a differentiation for treating immune system disorders and leukaemia \,
                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
Misc-difference 523
                                                                                                                                                                                       N-PSDB; AAZ94124.
                                                                                                                                                                                                                                                                                 21-AUG-1998;
                                                                                                                                                                                                                                                                                                                                   02-MAR-2000
                                                                                                                                                                                                                                                                                                                                                            WO200011168-A2
                                                                                                                                                                                                                                                                                                                                                                                                 Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY79183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY79183 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Haematopoietic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    phase synthesis methods.
                                                                                                                                                                                                                              Lemischka I,
                                                                                                                                                                                                                                                     (UYPR-) UNIV PRINCETON
                                                                                                                                                                                                                                                                                                         20-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Haematopoietic stem cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     leukaemia; antileukaemic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |||||||||||
1 ldddlehqggh 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6 LDDDLEHQGGH 16
                                                                                                                                                                                                    2000-237650/20.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                   Page 229-231; 256pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                              Moore
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           stem
                                                                                                                                                                                                                                                                                 98US-0138132
                                                                                                                                                                                                                                                                                                         99WO-US19052
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                 548
                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                               'note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein; 631
                                                                                                                                                                                                                              <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cell specific protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68.1%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                     "encoded by
                                                                                                                                                                                                                                                                                                                                                                                                            "encoded by CAT"
                                                                                                                                                                                                                                                                                                                                                                                                                                      "encoded by TTA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   immunomodulator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                immune system disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 21; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   therapy; mouse.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               such
It ca
                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
CC HSC activity, especially differentiation or replication. The CC invention provides claimed methods: for identifying PHSC-specific CC nucleic acids; for generating a stem cell/progenitor cell from CC PHSCs; for identifying the presence of a PHSC in a sample; for CC identifying the presence in a sample of a compound that modulates CC HSC activity; for using such a compound to compound that modulates CC acid into a HSC; and for ex vivo expansion of HSCs. Also claimed CC are vectors, host cells, and an antibody that specifically binds a XX Squence 631 AA;

Query Match Best Local Similarity 50.0%; Pred. No. 18; Matches 8; Conservative 2; Mismatches 6; Indels 0; Gaps 0; Unit of the completed: July 6, 2001, 09:09:18

Search completed: July 6, 2001, 09:09:18
```

Run

9n:

Title:

```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
    seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Issued_Patents_AA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
      193259 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6, 2001, 09:10:23; Search time 56.74 Seconds (without alignments) 5.681 Million cell updates/sec
  135
135
135
1477
1477
1477
1477
1001
1001
1001
463
393
393
3666
858
8588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20144635 residues
                US-08-820-825-14
US-09-307-817-14
US-09-307-817-14
US-08-409-731A-2
US-08-409-731A-2
US-08-820-825-2
US-08-899-031-1
US-09-307-817-2
US-08-423-752-10
US-08-423-752-10
US-08-46-994-3
US-08-617-6-873-24
US-09-136-652-2
US-08-679-635A-4
US-08-679-635A-4
US-08-68-6996-2
US-08-68-778-13-9
US-08-468-579B-12
US-08-468-577B-12
US-08-468-577B-12
US-08-468-577B-12
US-08-222-617A-6
PCT-US93-07213-5
US-08-222-617A-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Compugen
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                  2, Appli
2, Appli
2, Appli
2, Appli
10, Appli
10, Appli
10, Appli
10, Appli
12, Appli
2, Appli
2, Appli
4, Appli
1, Appl
                                                                                                                                                     ; TYPE: amino acid
; STRANDEDNESS: sing
; TOPOLOGY: linear
; MOLECULE TYPE: prote
US-08-820-825-14
                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 1
US-08-820-825-14
                                                        Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 14, Applicat Patent No. 5945309
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 9410 KEY WEST
CITY: ROCKVILLE
STATE: MD
COUNTRY: USA
ZIP: 20850
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy di
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
  5 KLDDDLEHQGGH 16
                                                          Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application
                                                            Conservative
                                                                                                                                                                        protein
                                                                                                                                                                                                              single
                                                                               45.7%;
```

```
US-08-222-617A-4
US-08-222-617A-25
US-08-222-617A-27
US-08-222-617A-2
US-08-397-972-1
US-08-397-972-1
US-08-476-008-67
US-08-833-485-67
US-08-833-485-67
US-08-899-324-33
US-08-899-324-33
US-08-816-392C-4
US-08-907-1166-6
US-08-907-166-6
US-08-844-188-5
US-08-844-188-5
US-08-844-188-5
US-08-844-188-5
US-08-844-188-5
US-08-844-188-5
US-08-844-188-5
ALIGNMENTS
                                                                                                                    Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                            Sequence
Sequence
                                                                        Sequence
                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                             1, Appli
67, Appl
67, Appl
67, Appl
67, Appl
67, Appl
133, Appl
14, Appli
6, Appli
6, Appli
14, Appli
15, Appli
16, Appli
16, Appli
17, Appli
18, 
                                                                                                                                                                                                                                                                                                                                                                                                       4, Appli
25, Appl
27, Appl
2, Appli
420, App
```

```
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/820,825
FILING DATE: 19-MAR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: 9F222
TELECOMMUNICATION INFORMATION:
TELEPIONE: (301) 309-8514
TELEPAX: (301) 309-8512
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
ILENTIN: 106 SMILE SEGUENCE
CHARACTERISTICS:
ILENTIN: 106 SMILE SEGUENCE
SEQUENCE CHARACTERISTICS:
ILENTIN: 106 SMILE SEGUENCE
SEGUENCE CHARACTERISTICS:
ILENTIN: 106 SMILE SEGUENCE
SEGUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: NI, JIAN
APPLICANT: YU, GUO-LIANG
APPLICANT: GENTZ, REINER L.
APPLICANT: DILLON, PATRICK
TITLE OF INVENTION: CYTOSTAT
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
LENGTH: 106 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: HUMAN GENOME SCIENCES, INC 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYTOSTATIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08820825
```

Score 43; Pred. No.

DB 2;

Length 106; Indels

0;

Gaps

0

Mismatches

Result No.

Minimum

```
US-08-409-731A-2
                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                        ; MOLECULE TYPE: protein US-09-307-817-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-307-817-14
                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 14, Application US/09307817 Patent No. 6232291
                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (301) 309-8512
INFORMATION FOR SEQ ID NO: 14:
                    APPLICANT: Gentz, Reiner
APPLICANT: Rosen, Craig A.
TITLE OF INVENTION: CYTOSTATIN I
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
                                                                            APPLICANT: Ni, Jian
APPLICANT: Yu, Guo-Liang
APPLICANT: Gentz, Reiner
APPLICANT: Rosen, Craig A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: (301) 309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: NI, JIAN
APPLICANT: YU, GUO-LIANG
APPLICANT: GENTZ, REINER L.
APPLICANT: DILLON, PATRICK
TITLE OF INVENTION: CYTOSTATIN III
NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 106 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/820,825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                     37 KPDKEIEHQGNH 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/09/307,817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37 KPDKEIEHQGNH 48
                                                                                                                                                                                                                                                                                                   5 KLDDDLEHQGGH 16
                                                                                                                                                                  , Application US/08409731A 5658758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ð
E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      106 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                                                                                  45.7%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36,373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PF222
                                                                                                                                                                                                                                                                                                                                                       Score 43;
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                     Length 106;
                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-08-470-298B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-409-731A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY:
STATE:
                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₹
```

```
Query Match
Best Local Similarity
7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08470298B Patent No. 5844081
                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/470,298B
FILING DATE: 06-JUN-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 301-309-8512
INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
LENGTH: 107 amino acids
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: NI, JIAN
APPLICANT: GENTZ, RE
APPLICANT: YU, GUO-L
APPLICANT: ROSEN, CR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                    TELEPHONE: 301-309-8504
                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ALLAN A.
REGISTRATION NUMBER: 36,373
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: CYTOSTATIN I NUMBER OF SEQUENCES: 12
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Benson, Robert H
REGISTRATION NUMBER: 30,446
REFERENCE/DOCKET NUMBER: PF1
TELECOMMUNICATION. INFORMATION:
TELEPHONE: 301-309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/01
FILING DATE: 24-MAR-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Benson, Robert H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                            STREET: 9410 KEY
CITY: ROCKVILLE
STATE: MD
                                                                                                                                                                                                                                                                                                                                       COUNTRY: US
ZIP: 20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38 KPDKEIEHQGNH 49
                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5 KLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                   E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENTZ, REINER
YU, GUO-LIANG
ROSEN, CRAIG A.
                      301-309-8512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/409,731A
                                                                             PF175D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PF175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,:
```

Gaps

0;

```
Qy
                                                                                                                                      Query Match
Best Local Similarity
Tatches 7; Conserva
                             US-08-820-825-2
                                                                                         В
                                                                                                                                                                                                                               ; MOLECULE TYPE: protein US-09-023-073A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-470-298B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-023-073A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 50...
7; Conservative
Sequence 2, Application US/08820825 Patent No. 5945309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 2, Application US/09023073A Patent No. 5977309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Ni, Jian
                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 107 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 301-610-5772
                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: Wales, michele M.
REGISTRATION NUMBER: P-4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS: LENGTH: 107 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Cytostatin I NUMBER OF SEQUENCES: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                         38 KPDKEIEHQGNH 49
                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: PF17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: ROCKVILLE STATE: MARYLAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38 KPDKEIEHQGNH 49
                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 13-FEB-1998 CLASSIFICATION: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                      5 KLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 KLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gentz, Reiner
Yu, Guo-Liang
Rosen, Craig A
                                                                                                                                                                                                                                                                                                                                    301-309-8439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version #1.30
                                                                                                                                                                    45.7%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/09/023,073A
                                                                                                                                                                                                                                                                                                                                                                               PF175D2
                                                                                                                                                                  Score 43; [
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 43; 1
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                DB 2;
                                                                                                                                                                                Length 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 107
                                                                                                                                                    Indels
                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                  0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: protein US-08-820-825-2
                                                                                                                                                                                                                                                                                                                                                                                                    US-08-899-031-1
                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application US/08899031 Patent No. 6046027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 45.7%;
Best Local Similarity 58.3%;
                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Guegler, Karl J.
APPLICANT: Shah, Purvu
TITLE OF INVENTION: HUMAN RETINOID BINDING PROTEIN
NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (301) 309-8512 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/08/820
FILING DATE: 19-MAR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF22
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 109-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
          COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: DOS
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compa
OPERATING SYSTEM: PC-D
SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                      COUNTRY:
                                                                                                                                                                                        CITY: Palo Alto
                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: UZIP: 20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                         ZIP: 94304
                                                                                                                                                                            STATE:
                                                                                                                                                                                                           ADDRESSEE: Incyte Pharmaceuticals, Inc. STREET: 3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38 KPDKEIEHQGNH 49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5 KLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    I: 135 amino acids
   amino acid

OGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ROCKVILLE
                                                                                                                                                                          CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: HUMAN GENOME SCIENCES,
9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NI, JIAN
                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENTZ, REINER L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YU, GUO-LIANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DILLON, PATRICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOSTATIN III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/820,825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43; Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PF222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 2;
3.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

CLASSIFICATION: 530 PRIOR APPLICATION NUMBER:

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-307-817-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-899-031-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No. 6232291 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/09307817 Patent No. 6232291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                               TELEFAX: (301) 309-8512 INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acio
STRANDEDNESS: si
TOPOLOGY: linea:
IMMEDIATE SOURCE:
                                                          NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (301) 309-8504
                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: CYTOSTATIN III
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: HUMAN GENOME SCIENCES, INC.
                  SEQUENCE CHARACTERISTICS:
                                                                                                                                           FILING DATE:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: GENTZ, REINER L
APPLICANT: DILLON, PATRICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MMEULL.
LIBRARY: Since 367304
                                                                                                                                                                                                                                 APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 9410 KEY CITY: ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity hes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38
                                                                                                                                                                                                                CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Billings, Lucy J
REGISTRATION NUMBER: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 KLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KPDKEIEHQGNH 49
                                                                                                                                                                                                                                                                                                                                                                  20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                  ¥
                                                                                                                                                                                                                                                                                                                                                                                                                               9410 KEY WEST AVENUE
135 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 135 amino acids
                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENTZ, REINER L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NI, JIAN
YU, GUO-LIANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SYNORAT01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     45.7%;
58.3%;
                                                                                                                                                                                                                                                US/09/307,817
                                                                                                                                                                                08/820,825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF-0349
                                                                                               PF222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No. 3.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
뭥
                                                                                                                                      ; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-492-459-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; MOLECULE TYPE: protein US-09-307-817-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-492-459-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 50...
The 7; Conservative
                                                               Matches
                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 10, Application US/08492459 Patent No. 6015689
                                                                                                                                                                                                                                                                                                           FILING DATE: May 16, 1994
ATTORNEY/AGENT INFORMATION:
NAME: WATTEN M. Cheek, Jr.
REGISTRATION UNMBER: 33,367
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Takashi
                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
1352 HKFHLDQAVEEEGSN 1366
                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/243,403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: MS-DOS
SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Washington STATE: D.C. COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/
FILING DATE: June 20, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER:
                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  38 KPDKEIEHQGNH 49
                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                              2 HKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 KLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amino acid
GY: linear
                                                                                                                                                                                                                     1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Wenderoth,
805 Fifteenth
                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IBM Compatible
                                                                                                                                                                                                                                                                                                202-371-8850
                                                                           43.68;
46.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OKADO et al. REGULATION OF AUREOBASIDIN SENSITIVITY IN FUNGUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/08/492,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lind & Ponack
Street, N.W., #700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3.5 inch, 1.4 mb
                                                                        Score 41; DB 3;
Pred. No. 1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43; DB 4; Pred. No. 3.7;
                                                             Mismatches
                                                                                          Length 1477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 135;
                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

US-08-423-752-10 ; Sequence 10, Application US/08423752 ; Patent No. 6022949

RESULT

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                   Score
                                                                                                                                      42.5
Query
Match L
                                                                                                                                                                                                                                                                                                       PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
July 6, 2001, 09:18:01; Search time 73.59 Seconds (without alignments)
16.562 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-437-912-7
94
1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                         219241 seqs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                          219241
```

## ALIGNMENTS

Cnosen parameters: 219 00 00 01 15 summaries 45 summaries 45 summaries 45 summaries 45 summaries 50 the score of the results of the total score distrib 50 summaries 50 summaries	RESULT 1  KGHUH1  KININGGEN, HMW precursor [validated] - human  N.Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen; prokininogen  N.Contains: bradykinin (kallidin I); HMW kininogen I; HMW kininogen II; low molecular  C;Species: Homo sapiens (man)  C;Accession: A01279; A5276; S32422; A91153; A24871; A27899; A27699; A31905; A34030;  R;Ohkubo, I.; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M.  Biochemistry 23, 5691-5697, 1984  A;Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide  A;Reference number: A90490; MUID:85122621  A;Accession: A01279  A;Accession: A01279  A;Residues: 1-389 <ohk>  A;Residues: 1-389 <ohk <ohk="">  A;Residues: 1-389 <ohk <ohk="" <ohk<="" th=""></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk></ohk>
number of results predicted by chance to have a n or equal to the score of the result being printed, analysis of the total score distribution.	A;Residues: 1-389 <ohk> A;Cross-references: GB:K02566; NID:g177889 R;Takagaki, Y.; Kitamura, N.; Nakanishi, S. J. Hiol. Chem. 260. 8601-8609. 1985</ohk>
SUMMARIES	A;Title: Cloning and sequence analysis of cDNAs for human high mo A;Reference number: A92544; MUID:85234582 A;Accession: A25276
Length DB ID Description	A; Molecule type: mRNA A; Residues: 1-592, 'I', 594-644 <tak></tak>
1 KGHUH1 2 H64231	A; Cross-references: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852
414 2 H04231 protein L nomolog 541 2 T34850 probable acidCoA	<pre>R; AuersWald, E.A.; Koessler, D.; Mentele, R.; Assialg-Machieldt, FEBS Lett. 321, 93-97, 1993</pre>
2 A41730	A; Title: Cloning, expression and characterization of human kininogen domain 3.
299 2 T25435 hypothetical prote 430 2 I39727 mannopine biosynth	A; Reference number: S32422; MUID: 93223854 A: Accession: S32422
2 \$01433	A; Molecule type: mRNA
2 C25486	A; Residues: 'ANSM', 253-377 < AUE>
2 C27115	A; Note: differences are due to known cloning artifacts
315 2 A27115 major acute phase 639 2 A25486 kininggen. Hww I n	R;Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl, W.
μ,	A;Title: The amino acid sequence of the light chain of human high
hypothetic	A; Reference number: A91153; MUID:86030270
2 T06484	A; Molecule type: protein
2 T06425	A; Residues: 379-644 <lot></lot>
2 S39079 2 T28238	A;Note: the bradykinin sequence preceding the light chain sequence was not determined
NI	Eur. J. Biochem. 154, 471-478, 1986
2 S58225	A; Title: Completion of the primary structure of human high-molecular-mass kininogen.
	A; Reference number: A24871; MUID:86108361
2 E86189	A; Molecule type: protein
2 T51449 hypothetical	A; Residues: 'Z', 20-380 <kel1></kel1>
1/4 2 G03/12 hypothetical prote	k; werrermann, J.; Loutspetch, r.; Henschen, A.; muerrer-escerr, w. in Kinins IV, Greenbaum, L.M., and Margolius, H.S., ed., pp.85-89, Plenum Press, New
2 JE0175	A; Title: Amino acid sequence of the light chain of human high me
385 2 T10181 aspartate carbamoy 393 2 S60465 dom-3 protein – Ca	A;Reference number: A27899 A;Accession: A27899

```
A; Molecule type: protein
A; Residues: 380-389 <SAS>
R; Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok, M.; Turl
R; Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok, M.; Turl
Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A; Title: Human cathapsin B and cysteine proteinase inhibitors (CPIs)
A; Reference number: S02482; MUID:89076517
A; Accession: S02482
A; Molecule type: protein
A; Residues: 1-19;189-192;310-314;381-389 <LEN1>
R; Rato, H.; Matsumura, Y.; Maeda, H.
FEBS Lett. 232, 252-254, 1988
A; Title: Isolation and identification of hydroxyproline analogues of
                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 450-452,'X',454,'X',456 <LIT>
R;Straczek, J.; Maachi, F.; le Nguyen, D.; Becchi, M.; Heulin,
FEBS Lett. 373, 207-211, 1995
A;Title: Purification from human plasma of a tetrapeptide that
A;Reference number: S68059; MUID:98033974
                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein
A; Residues: 264-359, 'N', 361-375 <LEN2>
R; Little, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A; Title: Human mast cell tryptase isoforms:
A; Reference number: S55239; MUID:95251593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein
A; Residues: 379-389, 'K', 390-407, 'Q', 409-644 <KEL2>
A; Residues: 379-389, 'K', 390-407, 'Q', 409-644 <KEL2>
R; Mindroiu, T.; Carretero, O.A.; Proud, D.; Walz, I
Biochem. Biophys. Res. Commun. 152, 519-526, 1988
A; Title: A new kinin moiety in human plasma kinino;
A; Reference number: A27699; MUID:88209021
A; Accession: A27699
A; Molecule type: protein
A; Molecule type: protein
A;Title: Structural organization of the human kininogen A;Reference number: A92545; MUID:85234583 A;Contents: annotation; gene organization
                                                                                                                                        A;Accession: S68059
A;Molecule type: protein
A;Residues: 431-434 <STR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Lenarcic, B.; Krasovec, M.; Ritonja, A.;
FEBS Lett. 280, 211-215, 1991
A;Title: Inactivation of human cystatin C
A;Reference number: S14303; MUID:91192133
A;Accession: S14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A;Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin
A;Reference number: A4030; MUID:88106632
A;Accession: A34030
A;Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Maeda, H.; Matsumura, Y.; Kato, H.
J. Biol. Chem. 263, 16051-16054, 1988
A;Title: Purification and identification of [hydroxyprolyl(3)]bradykinin in A;Reference number: A31905; MUID:89034061
A;Accession: A31905
A;Molecule type: protein
                                                                                    R;Kitamura, N.; Kitagawa, H.; Fukushima, D.; Takagaki, J. Biol. Chem. 260, 8610-8617, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: B61495
A; Molecule type: protein
A; Residues: 381-389 <KAT2>
A; Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Experimental source: urine A; Note: this peptide had Pro-383 A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Isolation and identification of A; Reference number: A61495; MUID:88211869 A; Accession: A61495
                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein A; Residues: 380-389 < KAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Note: this peptide had Pro-383 modified A; Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: protein .
A; Residues: 380-389 <KAT1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Molecule type: protein
Residues: 380-389 <MIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Residues: 381-389 <MAE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ritonja, A.; Olafsson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and kininogen by human cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   separation
                                                                                                                                                                                                                                                           tetrapeptide that potentiates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               D.; Scicli,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                Y.; Miyata, T.; Nakanishi,
                                                         gene and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   examination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              M.; Turk, V.
                                                                                                                                                                                                                                                                                                                 M.H.; Nabet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  released from
                                                         model for its evolut.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   substrate-spec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Þ
                                                                                                                                                                                                                                                              insulin-like
                                                                                                                                                                                                                                                                                                                 ₽.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ascitic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human
                                                                                                                                                                                                                                                                                                                    Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       flu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ano
```

```
A; Introns: 54, 34, 34, 34, 34, 34, 324/3; 253/1; 310/3; 346/3; 375/3
A; Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
C; Superfamily: kininogen; cystatin homology
C; Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d
F; 1-18/Domain: signal sequence #status experimental <SIG>
F; 19-644/Product: HMW kininogen II #status experimental <MATT>
F; 19-379,390-644/Product: HMW kininogen II #status experimental <HCH>
F; 19-379/Domain: cystatin homology <CYI>
F; 19-339/Domain: cystatin homology <CYI>
F; 264-375/Domain: cystatin homology <CYI>
F; 380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <BDY>
F; 380-389/Product: bradykinin (kallidin I) #status experimental <CH>
F; 381-389/Product: bradykinin (kallidin I) #status experimental <CH>
F; 421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F; 431-434/Product: low molecular weight growth promoting factor #status experimental
F; 19-6614/83-94,107-126,142-145,206-218,299-248,264-267,328-340,351-370/Disulfide bond
F; 48-98inding site: carbohydrate (Asn) (covalent) #status experimental
F; 380-380/Cleavage site: Ang-Ser (kallikrein) #status experimental
F; 380-380/Cleavage site: Arg-Ser (kallikrein) #status experimental
F; 537,78inding site: carbohydrate (Asn) (covalent) #status experimental
F; 537,78inding site: carbohydrate (Asn) (covalent) #status experimental
F; 537,78inding site: carbohydrate (Asn) (covalent) #status experimental
F; 537,546,557,571,593,628/Binding site: carbohydrate (Thr) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                           protein L homolog - My
C; Species: Mycoplasma
C; Date: 17-Nov-1995 #s
C; Accession: H64231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Reference number: A91455; MUID;90255622

A;Contents: annotation; bradykinin
C;Comment: The HMW kininogen precursor and the LMW form are produced from the same
C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation c
C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is
C; Superfamily:
                                                                                       A;Cross-references: GB:U39709; GB:L43967; NID:g1045984; A;Experimental source: strain G-37
                                                                                                                                                                                                                                A;Title: The minimal gene complement of Mycoplasma A;Reference number: A64200; MUID:96026346 A;Accession: H64231
                                                                                                                                                                                                                                                                                                                           , C.A.; Venter, J.C. Science 270, 397-403, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                            A; Genetic code:
                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-414 < TIGR>
                                                                                                                                                                           A;Status: preliminary; nucleic acid A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                R; Fraser, C.M.; Gocayne, J.D.; M.; Fuhrmann, J.; Nguyen, D.; C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;401,533,542,546,557,571,593,628
F;577/Binding site: carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Comment: The glycine/histidine/lysine-rich region of HMW kininogen light C; Comment: Bradykinin, released from kininogen by kallikrein, is a potent v
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         xyproline residue is present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Structural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genetics:
                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52-57, 1968
hypothetical protein
                               SGC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #sequence_revision 17-Nov-1995 #text_change 07-Dec-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mycoplasma genitalium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        features of plasma kinins and kininogens A91455; MUID:90255622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genitalium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .0%;
                                                                                                                                                                                                                                                                                                                                                                                      Utterback,
                                                                                                                                                                                                                                                                                                                                                                                White, O.; Adams, M.D.; Clayton, R.A.; Fleischmann, Utterback, T.R.; Saudek, D.M.; Phillips, C.A.; Merri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Ser)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 94; DB
Pred. No. 1.5
0; Mismatches
                                                                                                                                                                                                       sequence not shown; translation not shown
MG096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1
1.5e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -07;
0;
                                                                                                                                                                                                                                                                                           genitalium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 644;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                PID:g1045985; TIGR:MG288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       initiation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chain is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

Score 47;

DВ

2

Length 414;

Ş

В

```
submitted to the EMBL Data Library, September 1990 A; Reference number: $18971 A; Accession: $18971 A; Status: profile in the control of the 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleophosmin NO38 - African clawed frog
N;Alternate names: nucleolar protein NO38
C;Species: Xenopus laevis (African clawed frog)
C;Date: 31-Dec-1993 #sequence_revision 03-Nov-1995 #text_change 03-Nov-1995
C;Accession: S18971; A41730
R;Peculis, B.A.; Gall, J.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Superfamily: 4-coumarate--CoA ligase; acetate--CoA C;Keywords: acid-thiol ligase F;70-533/Domain: acetate--CoA ligase homology <ACL>
                                                                Query Match
Best Local Similarity
"-+-hes 7; Conserva
                                                                                                                                                                                                                          A;Gene: NO38
C;Superfamily: nucleophosmin
                                                                                                                                                                                                                                                                                                                                                                                                                          A;Residues: 1-296 <PEC>
R;Peculis, B.A.; Gall, J.G.
J. Cell Biol. 116, 1-14, 1992
J. Title: Localization of the nucleolar protein NO38 in A;Reference number: A41730; MUID:92112947
A;Accession: A41730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C:Species: Streptomyces coelicolor
C:Date: 05-Nov-1999 #sequence_revision
C:Accession: T34850
                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 5-296 < PE2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Gene: SCOEDB: SC2G5.17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:AL035478; PIDN:CAB36604.1; GSPDB:GN00070; SCOEDB:SC2G5.17 A;Experimental source: strain A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: Z21559
A; Accession: T34850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Oliver, K.; Harris, D.; Bentley, S.D.; Parkhill, J.; Barrell, B.G.; Rajandream, submitted to the EMBL Data Library, February 1999
                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                                                                                                                    A; Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues: 1-541 <OLI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               probable acid--CoA ligase (EC 6.2.1.-) SC2G5.17 [similarity] - Streptomyces
                                                                                                                                                                                                                                                                                 Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 46. Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    348 RMDDDLEHRTG 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 291 YKFKFEIDIKYQGGY 305
                                                                                                                                                                                                                                                                                                                 sequence extracted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 KLDDDLEHQGG 15
                                  Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        preliminary; translated from GB/EMBL/DDBJ
                                  HKFKLDDDLEHQ 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 7; Conserv
                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                              45.7%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46.78;
                                                                                                                                                                                                                                                                                                                 from
                                                                                                                                                                                                                                                                                                                 NCBI backbone
                                                                                       ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             w
۲۰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 44;
Pred. No.
                                                                                                                    Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-Nov-1999
                                                                                                           DB
. 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ن</u>
                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change 18-Aug-2000
                                                                                       ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ?:
                                                                                                                                           Length 296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 541;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ligase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amphibian oocytes.
                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coelicolor
                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M. A.
                                                                                                                                           RESULT
S01433
repressor protein C - phage phi-C31 C;Species: phage phi-C31 C;Date: 30-Sep-1989 #sequence_revision C;Accession: S01433; S38912 R;Sinclair, R.B.; Bibb, M.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mannopine biosynthesis protein mas1'
C;Species: Agrobacterium rhizogenes
C;Date: 09-Mar-1996 #sequence_revision
C;Accession: I39727
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Superfamily: short-chain alcohol dehydrogenase homology F; 200-377/Domain: short-chain alcohol dehydrogenase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-430 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: 139720; A; Accession: 139727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R; Hansen, G.; Larribe, M.; Vaubert, D.; Tempe, J.; Biermann, Proc. Natl. Acad. Sci. U.S.A. 88, 7763-7767, 1991
A;Title: Agrobacterium rhizogenes pri8196 T-DNA: Mapping and A;Reference number: 139720; MUID:91352070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Map position: 5
A; Introns: 57/2; 116/1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: DNA
A;Residues: 1-299 <WIL>
A;Cross-references: EMBL:Z75551; PIDN:CAA99933.1; GSPDB:GN00023; CESP:T28H10.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the EMBL Data A; Reference number: Z20034 A; Accession: T25435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypothetical protein T28H10.1 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #te: C;Accession: T25435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Note: encoded within the T-DNA (transferred DNA) segment of the plasmid; this segme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Genome: plasmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: mas1'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:M60490; NID:g142245; PIDN:AAA22101.1; PID:g142253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: CESP:T28H10.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Experimental source: clone T28H10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Kershaw,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 40.0
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       188 HTFQVDSSYDHASGH 202
                                                                                                                                                                                                                                                          99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>3</u>1
                                                                                                                                                                                                                                                                                                           4 FKLDDDL-----EHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                                          FEIDDDLKERDFGKHEGGY 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YSFKVDDENEHQ
                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      159/2; 201/1; 269/3
                                                                                                                                                                                                                                                                                                                                                                                             45.7%;
42.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Library,
                                                                                                                                                                                                                                                                                                                                                                                                Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  June 1996
                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-Mar-1996 #text_change 08-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Agrobacterium rhizogenes plasmid pRi8196
                                                          30-Sep-1989 #text_change 04-Mar-2000
                                                                                                                                                                                                                                                                                                                                                                                                   DB
24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       рв
16;
                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6;
                                                                                                                                                                                                                                                                                                                                                                                                                       Length 430;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 299;
                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <SADH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B.J.; Montoya, A.L.; Chi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA sequence of function
                                                                                                                                                                                                                                                                                                                                                                   6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

δÃ

밁

ş

```
A;Accession: C27115
A;Molecule type: DNA
A;Residues: 1-290 <FUN>
R;Kageyama, R.; Kitamura, N.; Ohkubo, H.; Nakanishi,
J. Biol. Chem. 262, 2345-3351, 1987
A;Title: Differing utilization of homologous transcr
A;Reference number: A25488; MUID:87137465
                                                                                                                                                                                                                                                         R;Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
A;Tille: Structure and expression of the genes
A;Reference number: A92653; MUID:87250580
                                                                                                                                                                                                                                                                                                                                                                                           K-kininogen, LMW precursor - rat (fragments) C;Species: Rattus norvegicus (Norway rat) C;Date: 31-Mar-1989 #sequence_revision 31-Ma C;Accession: C27115; A25488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       K-kininogen, HMW precursor - rat (fragment)
(;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 30-Sep-1993
C;Accession: C25486
R;Kitagawa, H; Kitamura, N.; Hayashida, H.; Miyata, T.; Nakanishi, S.
J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution of the rat kininogen generates of the company of the co
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-264 <KIT>
C; Comment: The nucleotide
C; Superfamily: kiningen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: c
C;Superfamily: phage phi-C31 repressor
C;Keywords: DNA binding; transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X12865; NID:g15458; PIDN R;Hartley, N.M.; Murphy, G.O.; Bruton, C.J.; Chatsubmitted to the EMBL Data Library, November 1993 A;Reference number: S38912 A;Accession: S38912
A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-683 < HAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mol. Gen. Genet. 213, 269-277, 1988
A;Title: The repressor gene (c) of the Stransference number: S01433; MUID:89039715
A;Accession: S01433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: EMBL:X76288; NID:g432610;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-683 <SIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity /v.v.
Thes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474 DDDVERQGAH 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  86 GHQLKLDDLKQQREDGYDHRHPVGH 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7 DDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GHKFKLDD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.7%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --DLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.2%;
40.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence was obtained cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of the Streptomyces temperate phage phi-c31: nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42.5; E
Pred. No. 17;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                     rat)
on 31-Mar-1989 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein C
regulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
40;
                                                          transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIDN:CAA31345.1;
Chater, K.F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIDN:CAA53911:1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DΒ
                                                                                                                                                                                                                                                                                           for major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 683
                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenBank, release
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                        acute phase alpha-1-protein (th
                                                      initiation sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rat kininogen gene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PID: g15459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:g432611
                                                                                                                                                                                                                                                                                                                                                                                                                                20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55.0
                                                          of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                          rat
                                                      7
                                                          and
```

```
A;Reference number: A92625; MUID:87137443
A;Accession: A25486
A;Molecule type: mRNA
A;Residues: 1-639 <KIT>
A;Note: the authors translated the codon CAA for resc;Superfamily: kininogen; cystatin homology
C;Superfamily: kininogen; cystatin homology
C;Keywords: alternative splicing
F;1-18/Domain: signal sequence #status predicted <SI
F;19-639/Product: kininogen, HMM I #status predicted
F;19-131/Domain: cystatin homology <CY1>
F;142-253/Domain: cystatin homology <CY2>
F;264-375/Domain: cystatin homology <CY3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 15-Nov-1996
C;Accession: A25486
C;Access
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Title: Differing expression patterns and evolution A; Reference number: A92625; MUID:87137443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: MAP1
C; Superfamily: kininogen;
F; 19-65/Domain: cystatin }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-315 <FUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
A;Title: Structure and expression of the A;Reference number: A92653; MUID:87250580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Species: Rattus norvegicus (Norway ra
C; Date: 31-Mar-1989 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-48 KKAG>
A;Cross_references: GB;J02662; NID:g205071; PIDN:AAA41483.1; PID:g205072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: not compared with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Accession: A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: kininogen; F;19-65/Domain: cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N;Contains: bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        major acute phase alpha-1 protein 1 - rat (fragments)
   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159 GHKHKLDDLKQQRDDGYNYRHPMGH 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              135 GHKHKLDDLKQQRDDGYNYRHPMGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GHKFKLDD------DLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GHKFKLDD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chem. 262, 2190-2198,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Norway rat)
-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      I MMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kitamura, N.; Hayashida, H.; Miyata,
262, 2190-2198, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            kininogen; cystatin homology
cystatin homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; cystatin homology
homology (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ---DLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.2%;
   45.2%;
40.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.2%;
40.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 42.5; I
Pred. No. 20;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1;
Score 42.5;
Pred. No. 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 42.5;
Pred. No. 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genes for
                                                                                                                                                                                                                           predicted <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <CYS>
                                 DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                  residue
                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        رب
د.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
                              Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 315;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the rat kininogen
                                                                                                                                                                                                                                                                                                                                                                  347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               acute
                                                                                                                                                                                                                                                                                                                                                               as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               phase
                                                                                                                                                                                                                                                                                                                                                                  Asn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               alpha-1-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             family
```

Matches

10;

Conservative

۲,

Mismatches

ر.

Indels

9;

Gaps

1;

```
A; Residues: 458-498 (HAN)

R; Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, H.;

J. Biol. Chem. 262, 2788-2779, 1987

A; Title: Bovine high molecular weight kininogen. The A; Reterence number: A92627; MUID:87137530

A; Accession: A29559

A; Molecule: type: protein
A; Residues: 'Z', 20-123, 'I', 125-127, 'I', 129-378 <SUE:
R; Lottspeich, F.; Kellermann, J.; Henschen, A.; Foel
Eur. J. Biochem. 152, 307-314, 1985
                                                               F;19-130/Domain: cystatin nomology <CYI>
F;141-252/Domain: cystatin homology <CYI>
F;263-374/Domain: cystatin homology <CYI>
F;363-374/Domain: cystatin homology <CYI>
F;379-388/Product: lysyl-bradykinin (kallidin II) #status experimental <KBDY>
F;380-388/Product: bradykinin (kallidin I) #status experimental <BDY>
F;380-621/Product: HMW kininogen I light chain #status experimental <LCH>
F;389-621/Product: HMW kininogen I light chain #status experimental <LCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Note: article in Japanese C:Comment: The HMW kininogen precursor is produced from the same gene as the LMW form as C:Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of the C:Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is imported c:Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator, in yproline residue is present in the kininogen prior to the release of bradykinin. C:Superfamily: kininogen; cystatin homology C:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; duple c:Keywords: cysteine cystein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030770
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
Seikagaku 56, 808, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokin N;Contains: bradykinin (kallidin); kininogen I; kininogen II; pr C;Species: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change C;Accession: A01281; A91923; A91938; A29559
                                                                                                                                                                                                                                                                                                                                                                                                 F;1-18/Domain: signal sequence #status predicted <SIG>F;19-621/Product: HMW prokininogen I #status predicted <MAT>F;19-379/Product: HMW kininogen I heavy chain #status experi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Studies on the primary structure A;Reference number: A91938; MUID:75170265 A;Accession: A91938 A;Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Reference number: A93317; MUID:84014106 A;Accession: A01281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Kitamura, N.; Takagaki, Y.; Furuto, Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: A94300 A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 378-393 <KAT>
R; Han, Y.N.; Komiya, M.; Iw.
J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: Studies on the structure of bovine kininogen: A;Reference number: A91923; MUID:70180420 A;Accession: A91923 A;Accession: A91923 A;Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Kato, H.; Nagasawa, S.; Suzuki, J. Biochem. 67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-621 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: A single gene for bovine high molecular weight and low molecular weight kining
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Title: Disulfide bonds in bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kininogen,
417-488/Region: glycine/histidine/lysine-rich;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex;29/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex;27-591,82-93,106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cross-references: GB:V01491; GB:K01757;
Kato, H.; Nagasawa, S.; Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GHQLKLDDLKQQREDGYDHRHPVGH 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GHKFKLDD------DLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alpha-2-thiol proteinase inhibitor; preprokininogen
Inin (kallidin); kininogen I; kininogen II; prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S.; Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S.; Tanaka, T.; Nawa, H.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NID:g491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H.; Hayashida, H.; Miyata, T.; Iwanaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The amino acid sequence, positions of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIDN:CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  high-molecular-weight kininogen. Am
                                                                                                                                                                                                                                                                                                                                                                                                 experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PID:g492
                                             experimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            kininog
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                             A; Map position:
C; Superfamily:
                                                                                                                                                                            C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Accession: T4
R; D'Angelo, M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω<sub>γ</sub>
                                                                                                                                        A; Gene: VC0796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Introns:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: T48995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T48995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KFSADDPIQHEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T48995
                                             citrate
```

```
F:87,168,169,204/Binding site: carbohydrate (Asn) (covalent) #status experimental F:136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental F:197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental F:378-379/Cleavage site: Met-Lys (kallikrein) #status experimental F:382/Modified site: 4-hydroxyproline (Pro) #status predicted F:388-389/Cleavage site: Arg-Ser (kallikrein) #status experimental F:389.406,512/Binding site: carbohydrate (Ser) (covalent) #status experimental F:399.400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) (covalent) #status experimental F:498-499/Cleavage site: Arg-Thr (kallikrein) #status experimental
                                                                                                                                                                           A; Gene: ATSP:F25L23.130
A; Map position: 3
                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-335 < DAN>
                                                                                                                                                                                                                                                                                                                                                                                              R;D'Angelo, M.; Vezzi, A.; submitted to the Protein Se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein F25L23.130 - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 02-Jun-2000 #sequence_revision 02-Jun-2000 #text_change
                                                                                                                                                                                                                                           A; Experimental source:
                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: 225012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              444 GHKHKHDQGHGHHGSH 459
3 KFKLDDDLEHQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                       115/2; 179/3;
                                           Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
8; Conser
                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                           EMBL:AL356014; GSPDB:GN00061; ATSP:F25L23.130 ce: cultivar Columbia; BAC clone F25L23
14
                                                                                                                                                       219/3
                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                  43.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     44.7%;
                                                                                                                                                                                                                                                                                                                                                                                                  Modesto, D.; Pigazzi,
equence Database, May :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                    Pred. No.
                                                                                      Score 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42;
Pred. No.
                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                  azzi, M.;
May 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
52;
                                                                                      DB
                                                                                      2;
                                           Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 621;
                                                                                      Length 335;
                                                                                                                                                                                                                                                                                                                                                                                                                       Valle, G.;
                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-Jun-2000
                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                       H.W.;
                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                       Rudd,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                         တ
```

```
A; Experimental source:
                      A;Molecule type: DNA
A;Residues: 1-356 <HEI>
A;Cross-references: GB:AE004166;
                                                                                                                                   A; Title: DNA Sequence of both chromosomes of the cholera pathogen A; Reference number: A82035; MUID:20406833 A; Accession: F82277
                                                                                                                                                                                                              l, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser,
Nature 406, 477-483, 2000
                                                                                                                                                                                                                                                                R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin,
                                                                                                                                                                                                                                                                                                                        C;Species: Vibrio cholerae
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
C;Accession: F82277
                                                                                                                                                                                                                                                                                                                                                                                                      citrate (pro-3S)-lyase ligase VC0796 [imported] - Vibrio cholerae (strain N16961
                                                                                                          A; Status: preliminary
serogroup
  GB:AE003852; NID:g9655259; O1; strain N16961; biotype
                                                                                                                                                                                                                                          С.М.
biotype
  PIDN:AAF93960.1;
El Tor
                                                                                                                                                                                                                                                                   Gwinn, M.L.;
H.; Dragoi,
                                                                                                                                                                                        Vibrio cholerae
                                                                                                                                                                                                                                                                                            Dodson,
                           GSPDB:GN
                                                                                                                                                                                                                                                              odson, R.
Sellers
```

sero

(pro-3S)-lyase ligase

```
aspartate carbamoyltransferase (EC 2.1.3.2) - garden pea (Species: Pisum sativum (garden pea) (C;Species: Pisum sativum (garden pea) (C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 29-Sep-1999 (;Accession: T06484 R;Williamson, C.L.; Slocum, R.D. Plant Physiol. 105, 377-384, 1994 R;Reference number: Z15710; MUID:94302176 A;Reference number: Z15710; MUID:94302176 A;Accession: T06484 Richard translated from Coloury (CD)
                                                                                                                     В
                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                 A;Gene: pyrB1
C;Superfamily: ornithine carbamoyltransferase; aspartate/ornithine carbamoyltransferase
C;Keywords: pyrimidine nucleotide biosynthesis; transferase
                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Mosidues: 1-386 <WIL>
A;Cross-references: EMBL:M96981; NID:g495658; PIDN:AAA62443.1; PID:g495659
A;Experimental source: cv. Wando, leaf
C;Genetics:
Search completed: July 6, 2001, 09:18:02 Job time: 648 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                        Query Match 43.6%;
Best Local Similarity 61.5%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 43.6
Best Local Similarity 54.5
Matches 6; Conservative
                                                                                                             1 GHKFKLDDDLEHQ 13
| ||:||| :| |
75 GQKFQLDDVIEAQ 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 HKFKLDDDLEH 12
|: :|||:||
33 HQLTVDDDVEH 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   43.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41; DB 2; Pred. No. 41; 3; Mismatches
                                                                                                                                                                                                      Score 41; DB 2; Length 386; Pred. No. 45; ?; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2; Indels
                                                                                                                                                                                                   0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .o
```

```
US-09-060-410-2; Sequence 2, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-136-652-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: peptide US-08-716-873-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-136-652-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 45...
Thes 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 2
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 42.6%;
Best Local Similarity 37.5%;
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/09136652A Patent No. 6096517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: NOVEL COMPOUNDS
FILE REFERENCE: GP-30010
CURRENT APPLICATION NUMBER: US/09/136,652A
CURRENT FILING DATE: 1998-08-19
EARLIER APPLICATION NUMBER: EP 974019473.3
EARLIER FILING DATE: 1997-08-19
                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 10
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: MARTIN, XAVIER APPLICANT: BORON, WALTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: KHANDOUDI, NASSIRAH
                                                                                                                                                                                                                                                                                                                                                                              tent No. 6165461
      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: DM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/060,410
                                                                                                                                                                                                                     APPLICANT: Chen, Zhu
APPLICANT: Berman, Kevin
TITLE OF INVENTION: TAO PROTEIN KINASES AND METHODS
TITLE OF INVENTION: THEREFOR
NUMBER OF SEQUENCES: 26
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1352 HKFHLDQAVEEEGSN 1366
                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               410 GENVQMNGDTPHDGGH 425
                                                                                                                              COUNTRY: US
ZIP: 98104
                                                                                                                                                                                             STREET:
                                                                                                                                                                               CITY: Seattle
                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 HKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1079
                                                                                                                                                            Washington
                                                                                                                                                                                                                                                                                                                                                                                              Application US/09060410
                                                                                                                                                                                           6300 Columbia Center,
                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                      Hutchinson, Michele
                                                                                                                                                                                                                                                                                                                                             Cobb, Melanie
                                                                                                                                                                                                            SEED and BERRY LLP
14-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 40;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                             701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1079;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
LENGTH: 1001 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-060-410-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
US-08-67.9-635A-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPUTER:
COMPUTER: PO-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/679,635A
FILING DATE: 10-JUL-1996
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.

NAME: Jackson Esq., David A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 4, Application US/08679635A Patent No. 5985643
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                              TELEFAX: 201-343-1684
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                             NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 600
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
TELEFAX: 201-343-1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Tomasz, Alexander
APPLICANT: Delencastre, Herminia
TITLE OF INVENTION: AUXILIARY GENES AND PROTEINS OF
TITLE OF INVENTION: METHICILLIN RESISTANT BACTERIA AND NUMBER OF SEQUENCES: 17
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                         HYPOTHETICAL:
                                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: MAKI DAVIG J.
REGISTRATION NUMBER: 31,392
REFERENCE/DOCKET NUMBER: 860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                492 HRLRLDKDLETQ 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: David A. Jackson, Esq.
STREET: 411 Hackensack Ave, Continental Plaza, 4th
STREET: Floor
                                                                                                                           TOPOLOGY:
                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 07601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
ses 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 HKFKLDDDLEHQ 13
                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hackensack
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New Jersey
                                                                                                                                                                         463 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                            linear
                                                                                       : protein
                                                                                                                                           single
 40.4%;
69.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41.5%;
58.3%;
                                                                                                                                                                                                                                                                                   600-1-141
 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             860098.421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 39; DB 4;
Pred. No. 1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
 38;
No.
 DB 2; · Length 463; le+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANTAGONISTS THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

0;

SENERAL INFORMATION:

```
; TYPE: amino acid
; STRANDEDNESS: sing
; TOPOLOGY: linear
; MOLECULE TYPE: pepti
US-08-423-752-10
                                                                                                                                                                                                                                                                                                                                                                US-08-945-994-3
                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/08945994 Patent No. 6043051 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
              OPERATING SYSTEM: MS-DOS
SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                               1352 HKFHLDOAVEEEGSN 1366
                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 1.44 mb
COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: May 16, 1994
ATTORNEY/AGENT INFORMATION:
NAME: Warren M. Cheek, Jr.
REGISTRATION NUMBER: 33,38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: 08/243,403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: MS-DOS
SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 5.25 inch, 500 kb
COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                      APPLICANT: Takashi OKADO et al TITLE OF INVENTION: PROMOTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER: 33,367
REFERENCE/COKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-8850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Takashi OKADO et al.
TITLE OF INVENTION: A GENE CODING FOR A PROTEIN REGULATING
TITLE OF INVENTION: AUREOBASIDIN SENSITIVITY
NUMBER OF SEQUENCES: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: April
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 805 Filt
                                                                                                                                                          CITY: Washington STATE: D.C.
                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: D.C.
                                                                                                                       ZIP: 20006
                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 HKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Wenderoth, Lind & Ponack
805 Fifteenth Street, N.W., #700
                                                                                                                                                                                              E: Wenderoth, Lind & Ponack, L.L.P. 2033 K Street, N.W., #800
                                                                                                                                           U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ss: single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       April 18, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43.68;
                                                                                                                                                                                                                                                                    PROMOTER
US/08/945,994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/423,752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41; DB 3;
Pred. No. 1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; MOLECULE TYPE: US-08-945-994-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-716-873-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 24, Application US/08716873
Patent No. 6194166
GENERAL INFORMATION:
APPLICANT: Takashi OKADO et al.
                                            INFORMATION FOR SEQ ID NO: 2.
SEQUENCE CHARACTERISTICS:
LENGTH: 1477 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEX:
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1352 HKFHLDQAVEEEGSN 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Warren M. Cheek, Jr.
REGISTRATION NUMBER: 33,367
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
                                                                                                                               REFERENCE/DOCKET NUMBER: TELECOMMUNICATION INFORMATION: TELEPHONE: 202-371-8850
                                                                                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                  SOFTWARE: Wordperfect 5.1
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08
FILING DATE: September 20
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette,
COMPUTER: IBM Compatib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
             TYPE: amino acid
STRANDEDNESS: sin
                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: D.C.
COUNTRY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
STRANDEDNESS: sin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: NO CLASSIFICATION:
                                                                                                                                                                              NAME: Warren M. Cheek, Jr. REGISTRATION NUMBER: 33,367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPHONE: 202-721-8200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 HKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                       20005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     E: Wenderoth, Lind & Ponack 805 Fifteenth Street, N.W., #700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Takashi OKADO et al.
NVENTION: GENE REGULATING AUREOBASIDIN SENSITIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
linear
                                                                                                                                                                                                                                                                                                                                                                                   IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     No. 6043051ember 6, 1997
                                                                                                                                                                                                                                                                                                September 20, 1996
               single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  43.6%;
                                                                                                                                                                                                                                                                                                                                                                       MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50
                                                                                                                                                                                                                                                                                                                     US/08/716,873
                                                                                                                                                                                                                                                                                                                                                                                                      ω
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 41; DB 3;
Pred. No. 1.2e+0;
                                                                                                                                                                                                                                                                                                                                                                                                  inch, 1.44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db ;
. 1.2e+02;
5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                 protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length: 0
length: 2000000000
 100.0

45.7

44.7

44.7

44.7

44.7

44.7

44.7

44.7

44.7

45.7

46.7

46.7

47.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7

48.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-437-912-7
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               July 6, 2001, 09:26:39; Search time 37.59 Seconds (without alignments)
14.581 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93435 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34255486 residues
PYBI_PEA
PYBI_PEA
MTLI_LACLA
MTLI_LACLA
MTLI_LACLA
YOR1_YEAST
CDX4_MOUSE
CBX4_HUMAN
PYB2_PEA
BOM3_CAEELL
STS_MOUSE
STV_METUS
TRC5_ECOLI
TRC5_CAMA
DLD_ECOLI
LIP_STAAU
REL6_ECOLI
YE20_METUS
NEUU_CHICK
YKG1_YEAST
NEUU_CHICK
YKG1_YEAST
NEUU_CHICK
YKG1_YEAST
NEUU_CHICK
YKG1_YEAST
LCA_CAMDR
                                                                                                                                                                                                                                                                                                                                                                        CRBB_CHICK
KNH1_BOVIN
KNG_MOUSE
VE4_HPV65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KNG_HUMAN
Y288_MYCGE
MS12_AGRRH
                                                                                                                                                                                                                                                                                                                                                                                                                                        RPC_BPPHC
KNG_RAT ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 4.5
Compugen Ltd
                                                                                                                        P01044
C007873
Q07877
Q07877
Q07877
Q0386
P35516
P355164
P353149
P5310427
C00257
Q043087
Q143087
Q143087
Q143087
P06149
P10335
P11585
Q58815
P38308
P34963
P35727
P00710
                                                                                                                                                                                                                                                                                                                                                                                                                       P08934
P55164
                                                                                                                                                                                                                                                                                                                                                                                                                                                     P50201
P08979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                           5 staphylococ
5 escherichia
5 methanococc
6 saccharomyc
3 gallus gall
                                                                                                                                     7 mus musculu
3 methanococc
9 escherichia
0 escherichia
5 gallus gall
2 saccharomyc
4 saccharomyc
                                                                                                                                                                                                                                                                                                           4 bos taurus
7 mus musculu
7 human papil
6 pisum sativ
4 pisum sativ
6 lactococcus
9 saccharomyc
                                                                                                                                                                                                                                               7 mus musculu
7 homo sapien
7 pisum sativ
) caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                    mycoplasma
lagrobacteri
bacteriopha
                                                                                                                                                                                                                                                                                                                                                                                                                     gallus gall
saccharomyc
camelus dro
                                                                                                        candida mal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sapien
```

•									
RP RT	R R R R R R R R R R R R R R R R R R R	RA R	RR RA RA		RA RT	R 2 2 2 2 2 3	RES AC DT DT		
DISULFIDE E Sueyoshi T. "Disulfide	SEQUENCE OF 3 MEDLINE=90255 Pierce J.V.; Pierce J.V.; "Structural f Fed. Proc. 27	SEQUENCE OF 3 MEDLINE-86030 Lottspeich F. Mueller-Ester "The amino ac mass kininoge Eur. J. Bioch	SEQUEN MEDLII Ohkubo "Isola its ic Bioche	GENE STRUCTUR MEDLINE-85234 Kitamura N., Nakanishi S.; "Structural o its evolution J. Biol. Chem	SEQUENCE FROM N.A. (ISOFORMS HMW ANI TISSUE-Liver; MEDLINE-85234582; PubMed-2989293; Takagaki Y., Kitamura N., Nakanishi "Cloning and sequence analysis of ci weight and low molecular weight prei two human prekininogens."; J. Biol. Chem. 260:8601-8609(1985).	Homo sapie Eukaryota; Mammalia; NCBI_TaxID	RESULT 1  ID KNG_HUMAN STANDAR: AC P01042; P01043; DT 21-JUL-1986 (Rel. 01, ' DT 01-FEB-1996 (Rel. 33,   DT 01-CT-2000 (Rel. 40,   DE KININOGEN PRECURSOR (A) DE BRADYKININ].		6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
IDE BO	ICE OF IE=9025 I J.V.; Itural Troc. 2	INE-86030270, speich F., Ke ler-Esterl W amino acid skininogen.", J. Biochem.	VCE OF 1 VE=85122 O I., Ku ition of lentity emistry	NE STRUCTURE. DLINE=8523458 tamura N., Ki tamura N., Ki kanishi S.; kructural org s evolution.	TELIVES WE=852: NE=852: NE=852: NE 952: NE 952: NE 97: NE	sapiens yota; M lia; Eu TaxID=9	MAN 2; P01( 2-1986 3-1996 1-2000 1-2000 OGEN P1 (ININ]		3 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
BONDS ., Mi bond	: ea 62	75 27 10 10 10	1-4 2262 Kura Kura of a Wi Wi	URE. 23458 Xi, Ki S.; Orga Lon. "	FROM N. ver; 5234582 Y., Kit and seq d low m prekin chem. 2	eta Meta 1the	043; (Re (Re (RECU		400 400 400 400 400
yata s in	-389. 2; Publitures (12-57(1)		)F 1-401 FROM N.A. 122621; PubMed=644159 Kurachi K., Takasawa n of a human cDNA for a ty with low molecular ry 23:5691-5697(1984)	3. Pub (itagawa (itagawa (ganizat ",")	1.A. ( 12; Pu tamur tamur quenc molec ninog 260:8	iens (Human) a; Metazoa; ; Eutheria; ID=9606;	STANDARD  1. 01, C  1. 33, L  1. 40, L  1RSOR (AL		4444444444
T., Ka bovine	Med= of p 968)	nr e	OM N.A. bMed=6441591 ., Takasawa n cDNA for a w molecular -5697(1984).	PubMed= awa H., zation (	ubMed=298 ra.N., Na ce analys cular we1 gens."; 8601-8609	Chordata Primates	ARD; , Createc , Last se , Last ar , Last ar , ALPHA-2-		142 239 239 290 316 319 329 341 469 573 651 657
ato H	9 9	105 J. of 1	A. 644: kasa A fo ecu:	-298929 Fukusi of the 0f the	2989 Nal 1ys: 1ys: 609	ata; tes;	ate t s t a A-2		
⊼:	632; a kinin	4110; Henschen the light (	1; T., alpha weig	9294; kushima D the human	HMW AND 9293; kanishi is of cb ght prek (1985).	Crania Catarı	PRT; d) equence nnotatio	ALIG	NUSB_THEMA 2138_HUMAN 2138_HUMAN YA01_METJA YP23_VZVD OTCA_CORGL RIK2_TOBACC ETFA_SCHPO T1S_SALTE GLGB_HUMAN GLGB_HUMAN GLGB_HUMAN
Iwanaga S.; ininogens.";	s and kininogens."	A., Foertsch B Chain of human	., Shiokawa H., Sasaki pha 2-thiol proteinase eight kininogen.";	., Takagaki Y., kininogèn gene	AND LMW). shi S.; cDNAs for human high prekininogens. Primary 5).	ta; Vertebrata; hini; Hominidae;	PRT; 644 AA. ed) sequence update) annotation update) 2-THIOL PROTEINASE INHIBITOR)	ALIGNMENTS	
	••	high-mol	i M.; e inhib	Miyata T and a mo	molecular	Euteleost Homo.			Q9x286 Q5x2744 Q5x2744 Q5x274 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q5x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27 Q6x27
	٠,	ecular-	oitor and	model for	llar ures of	;tomi;	[CONTAINS:		thermotoga homo sapien methanococc varicella-z corynebacte nicotiana t schizosacch salmonella zea mays (m homo sapien panulirus i homo sapien

```
CC -!- FUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
CC -!- FUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
CC HEW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
CC HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO
CC FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMBIN-AND PLASMIN-
CC HUDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE
CC BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS A VARIETY OF
CC PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
COUTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
CC DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
CC MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR
CC PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF
CC OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
CC ACARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION);
CC INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION);
CC LAW-KININGEN IS IN CONTRAST TO HMW-KININGEN NOT INVOLVED IN BLOOD
  CHAIN
                                            SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                    PIR;
PIR;
PIR;
                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are no restricted the surpression of the surpress
    PEPTIDE
                                                                                                                                      Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       modified and this st
                                                                                                                 Bradykinin;
                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                             SWISS-2DPAGE;
                                                                                                                                                                                                                                                                                                                                                                                 L; M11524; AAB5955

L; M11525; AAB5955

L; M11527; KGHUH1

A01279; KGHUH1

A05276; A25276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW (SHOW PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININGGEN
                                                                                                                                                                                                                                                                                                                    A01280;
B25276;
S02482;
                                                                                                                                                                                                                                                                                                                                                                                                                          M11437 AAB59550.1;
M11437 AAB59550.1;
M11438 AAB59550.1;
M11521 AAB59550.1;
M11522 AAB59550.1;
M11523 AAB59550.1;
M11524 AAB59550.1;
M11525 AAB59550.1;
M11526 AAB59550.1;
M11527 AAB59550.1;
M11528 AAB59550.1;
M11528 AAB59551.1;
M11437 AAB59551.1;
M11521 AAB59551.1;
M11522 AAB59551.1;
M11523 AAB59551.1;
M11524 AAB59551.1;
M11525 AAB59551.1;
M11527 AAB59551.1;
M11528 AAB59551.1;
M11529 AAB59551.1;
M11529 AAB59551.1;
M11521 AAB59551.1;
M11521 AAB59551.1;
M11522 AAB59551.1;
M11523 AAB59551.1;
M11524 AAB59551.1;
M11525 AAB59551.1;
M11527 AAB59551.1;
M11528 AAB59551.1;
M11529 AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FIGURE STANDARD IN RELEASED FROM KININOGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                  PF00031; cystatin;
                                                                                                                                                      PR00334; KININOGEN.
; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                            IPR000010;
IPR002395;
                                                            splicing.
                                                                                                          Blood coagulation;
19
19
381
                                                                                                                                                                                                                                                                                                                                         KGHUL1.
B25276.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  this statement
                                                                                                                                    Plasma; Repeat;
                                                                                                                                                                                                                                                                                               P01043; HUMAN
  380
389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                             JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  rest rong as its content is not removed. Usage has agreement if
                  KININOGEN HEAVY CHAIN
                                                                                                        Thiol protease inhibitor; Vasodilator; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SHOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HERE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      jh a collaboratic
EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       d for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
```

```
Вþ
                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                             Y288_MYCGE
P47530;
01-OCT-1996
01-OCT-1996
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
Fraser C.M., Gocayne J.D., White O., Adams M.D., Clayton R.A., Fleischmann R.D., Bult C.J., Kerlavage A.R., Sutton G., Kelley J.M. Fritchman J.L., Weidman J.F., Small K.V., Sandusky M., Fuhrmann J.L. Nguyen D.T., Utterback T.R., Saudek D.M., Phillips C.A., Merrick J. Tomb J.-F., Dougherty B.A., Bott K.F., Hu P.-C., Lucier T.S., Peterson S.N., Smith H.O., Hutchison C.A. III, Venter J.C.; "The minimal gene complement of Mycoplasma genitalium."; Science 270:397-403(1995).
                                                                                                                                                                                                          MYCGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID DISULFID
                                                                     SEQUENCE FROM N.A.
STRAIN=ATCC 33530 / G-37;
MEDLINE=96026346; PubMed=7569993;
                                                                                                       Bacteria; Firmicutes; Bacillus/Clostridium group; Mollicutes; Mycoplasmataceae; Mycoplasma. NCBI_TaxID=2097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOD_RES
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
DOMAIN
DOMAIN
                                                                                                                                   Mycoplasma
                                                                                                                                             MG288
                                                                                                                                                     HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                         VARSPLIC
                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                           474 GHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                            1 GHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                    genitalium.
                                                                                                                                                                                                                                                                                                                        644
                                                                                                                                                    (Rel. 34, Last sequence update)
(Rel. 38, Last annotation update)
L PROTEIN MG288.
                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
480
19
28
28
107
142
229
2264
328
                                                                                                                                                                                                                                                                                                                         Ã,
                                                                                                                                                                                                STANDARD;
                                                                                                                                                                               34, Created)
                                                                                                                                                                                                                                                                                                                                                           48
169
205
294
401
533
542
546
557
571
571
571
593
628
                                                                                                                                                                                                                                                                                                                         71945
                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                           489
                                                                                                                                                                                                                                                           16
                                                                                                                                                                                                                                                                                                                         WW;
                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KININOGEN LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
HIS-RICH (ASSOCIATED W
                                                                                                                                                                                                                                                                                                                      VSPPHTSMAPAQDEERDSGKEQGHTR ->
PPKAGAEPASEREVS (IN ISOFORM LAW).

MISSING (IN ISOFORM LAW).

T -> I (IN REF. 1).

3132B4CBAF8FBB7E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                                                                                                                                                                                                     Score 94;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTIVITY).
                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                414
                                                                                                                                                                                                                                                                                                                                                                                                                                                (GLCNAC.)
(GLCNAC.)
(GLCNAC.)
                                                                                                                                                                                                                                                                                    6.1e-08;
                                                                                                                                                                                                AA.
                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                             Length 644;
                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WITH CLOTTING
                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACID
                                                                                                                                                                                                                                                                                                                                                   LMW).
                                                                                                                                                                                                                                                                                                                                                          SHLRSCEYKGR
                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                           Gaps
                                   J.M.
```

0;

۲,

```
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 7
                NP_BIND
ACT_SITE
                                      PROSITE; Plasmid;
                                                                                                                                      modified and this statement is not removed entities requires a license agreement (See
                                                                                                                                                                                                                                                                                 differentiation.";
Proc. Natl. Acad. Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. MEDLINE=91352070; PubMed=1909028;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Agrobacterium rhizogenes Plasmid pRi8196.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-1996
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGRRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical protein. SEQUENCE 414 AA; 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This
                                                                                                                                                                             the European Bioinformatics Institute.
                                                                                                                                                                                                        This
                                                                                                                                                                                                                                                                                                                                   Hansen G., Larribe M., Vaubert D., Tempe J., Biermann B.J., Montoya A.L., Chilton M.D., Brevet J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MS12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TIGR; MG288;
                                                                                                  EMBL; M60490; AAA22101.1;
                                                                                                                            or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U39709; -; NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or send an email to license@isb-sib.ch)
                                                                Pfam;
                                                                                      HSSP; P14061;
                                                                                                                                                                                                                                                                                                        "Agrobacterium rhizogenes pRi8196 T-DNA: mapping and DNA sequence functions involved in mannopine synthesis and hairy root
                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=359
                                                                                                                                                                                                                                                                                                                                                                                                                  Rhizobiaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGROPINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute.
                                                                         InterPro; IPR002198; -
                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 HKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO
                                                                                                                                                                                                                                                        FUNCTION: REDUCES DEOXY-FRUCTOSYL-GLUTAMINE PATHWAY: AGROPINE / MANNOPPINE SYNTHESIS.
                                                                                                                                                                                                                                             SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _AGRRH
                                                                                                                                                                                                                                 (SDR)
                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YKFKFEIDIKYQGGY 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the Eb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity 46. 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             996 (Rel. 34, Created)
996 (Rel. 34, Last sequence update)
000 (Rel. 40, Last annotation update)
SYNTHESIS REDUCTASE (EC 1.-.-.)
                          Oxidoreductase.
203 227
                                                                                                                                                                 non-profit institutions as long
                                                    PS00061;
                                                                                                                                                                                                                                 FAMILY
  430 AA;
             346
                                                                                                                                                                                                                                                                                                                                                                                                                Agrobacterium
                                                                adh_short;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                    ADH_SHORT;
  47583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50.0%;
                                                                                                                                                                                                                                             ō
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MW;
 WW.
                                                                                                                                                                                                                                                                                                                                                                                                                            alpha
                                                                                                                                                                                                                                            THE SHORT-CHAIN DEHYDROGENASES/REDUCTASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THE MG032 / MG096 / MG288 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 47; DB Pred. No. 2.1; 6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6,
NAD OR NADP (BY SIMILARITY).
BY SIMILARITY.
; DD1B7E8D92854D2C CRC64;
                                                  1.
                                                                                                                                                                                                                                                                                 88:7763-7767(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6D7480CE59D8273C
                                                                                                                                                                                                                                                                                                                                                                                                                            subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ormatics and the EMBL outstation There are no restrictions on it ong as its content is in no wa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
2.1;
                                                                                                                                                                           There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                     http://www.isb-sib.ch/announce/
                                                                                                                                                                as its content
                                                                                                                                                   Usage
                                                                                                                                                                                                                                                                                                                                                                                                                            Rhizobiaceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 414;
                                                                                                                                                                                                                                                                   TO MANNOPINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                    bу
                                                                                                                                                                            restrictions
                                                                                                                                                    and
                                                                                                                                                                                           EMBL
                                                                                                                                                                                                     a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a collaboration -
MBL outstation -
                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                         outstation
                                                                                                                                                                in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in no way
                                                                                                                                                    commercia:
                                                                                                                                                                                                                                                                                                                        of.
                                                                                                                                                                             on
                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

Query Match

45.78;

Score 43;

DВ

۳.

Length 430

```
RESULT
KNG_RAT
    OC GRE DE DE ACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALD DE RESERVATION DE LA COMPANIA DEL COMPANIA DE LA COMPANIA DEL COMPANIA DE LA COMPANIA DEL CO
                                                                                                                                                                                                                                                                                                Дb
                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RPC_BPPHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 42.:
Matches 8; Conservative
                                                         KNG_RAT STANDARD;
P08934; P08933;
01-NOV-1988 (Rel. 09, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RPC_BPPHC
P08979;
                                               KNG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Extended Bioinformatics Institute. There are no restruce by non-profit institutions as long as its content
Rattus norvegicus (I
Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transcription regulation; SEQUENCE 683 AA; 74077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; X12865; CAA31345.1; -. EMBL; X76288; CAA53911.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              development.";
Gene 147:29-40(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteriophage phi-C31. Viruses; dsDNA viruses, Lambda phage group. NCBI_TaxID=10719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1988 (Rel.
01-NOV-1988 (Rel.
01-NOV-1997 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X76288; CAA539
PIR; S01433; S01433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE=94374705; Pubmed=8088546;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sinclair R.B., Bibb M.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=89039715;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=C+-NORWICH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPRESSOR PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1988
                                                                                                                                                                                                                                                                                                  474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99 FEIDDDLKERDFGKHEGGY 117
                                                                                                                                                                                                                                                                                                                                             7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4
                                                                                                                                                                                                                                                                                                                                           DDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 repressor gene (c) of the Streptomyces temperate phage phi c31: sotide sequence, analysis and functional cloning."; Gen. Genet. 213:269-277(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FKLDDDL----
                                                                                                                                                                                                                                                                                                DDDVERQGAH
                                                                                                                                                                                                                                                                                                                                                                                        Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murphy G.O., Bruton C.J., Chater K.F.; the essential early region of phi C31, a temperate es spp. with unusual features in its lytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                     (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=3185504;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EHQGGH
  Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                           45.78;
70.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MW; B02379D204F37D1B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                      Score 43; DB Pred. No. 17; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 9.8;

Mismatches
  Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tailed phages; Siphoviridae;
                                                                                                                                                                                                                                                                                                                                                                                                              DB
17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                     ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Usage
                                                                                                                                                                                                                                                                                                                                                                                        2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bγ
  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     is in
                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  collaboration
Coutstation -
                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   phage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
```

0,

```
entities
or send a
                                                                                                                                                               use by
modified
  EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                           This
                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HAW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGILATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKERIN AND FACTOR XI NEXT TO
FACTOR XII; (3) HMM-KININGEN INHIBITS THE THROMBIN-AND PLASMIN-
INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE
BRADYKININ THAT IS RELEASED FROM HMM-KININGEN SHOWS A VARIETY OF
PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR
PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF
OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION,
INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING BACTON ACTION);
LAM-KININGEN IS IN CONTRAST TO HMM-KININGEN NOT INVOLVED IN BLOOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kageyama R., Kitamura N., Ohkubo H., Nakanishi S.;
"Differing utilization of homologous transcription initiation si
of rat K and T kininogen genes under inflammation condition.";
J. Biol. Chem. 262:2345-2351(1987).
-!- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES;
                                                                                                                                                                                                                                   between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Furuto-Kato S., Matsumoto A., Kitamura N., Nakanisni S.; Primary structures of the mRNAs encoding the rat precursors f bradykinin and T-kinin. Structure the structure of kininogens bradykinin and T-kinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Structure and expression of the genes protein (thiostatin) and kininogen in t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         major acute phase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Differing expression patterns and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-87137443; PubMed-3029068;
Kitagawa H., Kitamura N., Hayashida H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mammalia; Eutheria;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=87137465; PubMed=3818598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1-41 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=87250580; PubMed=2439509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 1-65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=86008264; PubMed=2413018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                    CLOTTING.
SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                                                European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
                                                                                                                                                                                                                                                                                                    SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                       PTM: BRADYKININ IS MISCELLANEOUS: RAT
                                                                                                                                                                                                                                                                                                                                                  HMW/LMW KININOGENS
L29428;
M11884;
M14369;
M14369;
                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   W.-P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            family.
                                                                                                                   an
                                                                                                                                                             non-profit institutions as long and this statement is not removed
                                                                                                                                            requires
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chem.
                                                                                                                 equires a license agreement (S email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schreiber G.;
AAA41486.1;
AAA41487.1;
AAA41484.1;
AAA41485.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262:9298-9308(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       260:12054-12059(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein and alpha 1-cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (LMW ISOFORM)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and kiningen in the rat.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N.A
                                                                                                                                                                                                                                                                                                                                        RELEASED FROM KININGEN BY PLASMA KALLIKREIN. EXPRESS FOUR TYPES OF KININOGENS: THE CLASSICAL AND TWO ADDITIONAL LAW-LIKE KININGENS: T-I AND
  ALT_SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  evolution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MMH
                                                                                                                                         (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Miyata T., Nakanishi S.; ution of the rat kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SHOWN
                                                                                                                                    http://www.isb-sib.ch/announce/
                                                                                                                                                          Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HERE) AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acute phase alpha
                                                                                                                                                          bу
                                                                                                                                                             and
                                                                                                                                                                                                                                EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LMW;
                                                                                                                                                                                                                                                      Ø
                                                                                                                                                             for
                                                                                                                                                                                                                                collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ARE
                                                                                                                                                               commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HAS
                                                                                                                                                                                     no
                                                                                                                                                                                                          g
```

DANGER REPRESENTATION OF THE PROPERTY OF SOME PROPERTY OF

```
RESULT 6
CRBB_CHICK
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 10
                                                                                                                                                                                                     01-OCT-1996 (Rel. 3
01-OCT-1996 (Rel. 3
01-OCT-2000 (Rel. 4
BETA CRYSTALLIN A2
                                                                                                                                                                                                                                                 CRBB_CHICK
P55164;
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
DISULFID
DISULFID
DISULFID
                           SEQUENCE FROM N.A.
STRAIN-WHITE LEGHORN; TISSUE-Lens;
MEDLINE-96296047; PubMed-8674507;
Duncan M.K., Banerjee-Basu S., McDermott J.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID
                                                                                                                                                                       Gallus gallus
"Sequence and expression B3-crystallins.";
                                                                                                                                        Archosauria;
                                                                                                                                                        Eukaryota;
                                                                                                                                                                                         CRYBA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M16455; AAA41482.1; PIR; A25486; A25486. PIR; A28055; A28055.
                                                                                                         NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00031; cystatin; 3. PRINTS; PR00334; KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bradykinin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Glycoprotein; Plasma; Repeat; Thiol protease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00287; CYSTATIN; 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR002395; -
                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                               1 GHKFKLDD------DLEHQGGH
                                                                                                                                                                                                                                                                                                                                                               GHQLKLDDLKQQREDGYDHRHPVGH
                                                                                                                                                                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                       Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
61
639
                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Blood coagulation; Inflammatory response; splicing; Multigene family.
                                                                                                                                                                       (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                        δ2
                                                                                                                                                                                                                  34, Created)
34, Last sequence up
40, Last annotation
                                                                                                                                                                                                      (BETA-A2-CRYSTALLIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          639
61
70933
                                                                                                                                        Neognathae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chordata; Craniata; Vertebrata; Eute.
Neognathae; Galliformes; Phasianidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                         45.2%;
              o
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W.
              chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INTERCHAIN
BY SIMILARII
BY SIMILARIO
ON-LINKED (GIN-LINKED (GIN-LINKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYSTATIN-LIKE 1
CYSTATIN-LIKE 2
CYSTATIN-LIKE 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MISSING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINED (GLCNAC...) (POTENTIAL).
VSPSYIARVOEERDPGNEQGFIHGHGWLHAKQ -> RLLNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CEYKGRLLKAGAGPAPERQAEASTVTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KININOGEN LIGHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KININOGEN HEAVY
                                                                                                                                                                                                                                                                                                                                                                                             16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -> K (IN REF. 2)
D3172DF94FF56AF5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Y SIMILARITY.
Y SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                           42.5; NO. 19;
              beta
                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                    196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GLCNAC...)
(GLCNAC...)
                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BY
                A2 -
                                                                                                                                                                                                                                                                                  β
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω N H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY).
              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inhibitor; Vasodilator;
                                                                                                                                                                                                                                                                                                                                                                                                                            5.
                             Piatigorsky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LMW).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .) (POTENTIAL)
                                                                                                                                        Euteleostomi;
idae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                            1;
```

```
A REAL REPORTS TO THE REAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STITES REPORTED TO STATE OF THE STATE OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P01044;
21-JUL-1986
21-JUL-1986
01-JUN-1994
                                                                                                                           MEDLINE=87137530; PubMo
Sueyoshi T., Miyata T.
Miyata T., Iwanaga S.;
                                                                                                                                                                                                                                               Nature
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   _BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eye lens
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Exp.
                                                                          "Bovine high molecular weight kininogen. positions of carbohydrate chains and dis
                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-84014106; PubMed=6571699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KNH1
                                                chain portion.
                                                                                                                                                                                                                     SEQUENCE OF 19-378
                                                                                                                                                                                                                                                                                                Kitamura N., Takagaki Y., Furuto S., Tana
"A single gene for bovine high molecular
weight kininogens.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BRADYKININ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bovidae; Bovinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KININOGEN, HMW I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U28145; AAB08774.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 117
                       Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GHKFKLDDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                European Bioinformatics Institute. The by non-profit institutions as long ified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: BELONGS TO THE BETA/GAMMA-CRYSTALLIN FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRUCTURE OF BETA-CRYSTALLIN OLIGOMERS SEEMS TO BE STABILIZED THROUGH INTERACTIONS BETWEEN THE N-TERMINAL ARMS (BY SIMILARITY). DOMAIN: HAS A TWO-DOMAIN BETA-STRUCTURE, FOLDED INTO FOUR VERY SIMILAR GREEK KEY MOTIFS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OF THE VERTEBRATE EYE LENS.
SUBUNIT: HOMO/HETERODIMER, OR COMPLEXES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GHKFELSDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FUNCTION: CRYSTALLINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eye Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P02522;
                                                                                                                                                                                                                                                                        305:545-549(1983).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PS00225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR001064; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
52
100
105
147
196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 01, Created)
(Rel. 01, Last seq
(Rel. 29, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62:111-119(1996).
CRYSTALLINS ARE THE DOMINANT STRUCTURAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1BLB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     crystall;
                       262:2768-2779(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 01, Last sequence update)
. 29, Last annotation update)
PRECURSOR (THIOL PROTEINASE INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Duplication
                                                                                                                                                                                     PubMed=3546295;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRYSTALLIN_BETAGAMMA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
99
104
146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata; Craniata;
Cetartiodactyla; Ru
                                                                                                                                                           T., Hashimoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.78;
77.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₩;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOTIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONNECTING PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOTIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOTIF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-TERMINAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C177575C41D3EE44 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                           .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42;
No.
                                                                                                                                                                                                                                                                                                                         Tanaka T.,
ular weight
                                                                             disulfide bridges
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ruminantia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       621
                                                                                                                                                        Kato H., Hayashida H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no restrictions 
ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ARM
                                                                          The amino acid sequence, ulfide bridges in the heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  بر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OF HIGHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 196;
                                                                                                                                                                                                                                                                                                                            Nawa
and i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   уd
                                                                                                                                                                                                                                                                                                                               low
                                                                                                                                                                                                                                                                                                                                                      н.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORDER. THE STABILIZED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORDER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPONENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                               molecular
                                                                                                                                                                                                                                                                                                                                                      Nakanishi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TEMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commercial
                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

```
CARBOHYD
DISULFID
                                                             MOD_RES
CARBOHYD
                                                                                                                 PEPTIDE
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                                                                       CHAIN
                                                                                                                                                                                                               InterPro; IPR000010; -.
InterPro; IPR002395; -.
Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
                                                                                                                                                                                                                                                                                                use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
DISULFIL
                               CARBOHYD
                                        CARBOHYD
                                                    CARBOHYD
                                                                                                         DOMAIN
                                                                                                                                                    CHAIN
                                                                                                                                                             SIGNAL
                                                                                                                                                                                         Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing;
                                                                                                                                                                                                    PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                        PIR; A01281; KGBOH1.
PIR; A29559; A29559.
                                                                                                                                                                                                                                                                              EMBL; V01491; CAA24735.1;
                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Studies on the primary structure of bovine h kininogen. Amino acid sequence of a fragment peptide') released by plasma kallikrein."; J. Biochem. 77:55-68(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biochem. 67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen: cleavages of disulfide bonds and of methionyl bonds in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 378-393.
MEDLINE=70180420; PubMed=4986212;
MEDLINE=70180420; Suzuki T.;
                                                                                                                                                                                 Thiol protease inhibitor; Bradykinin;
                                                                                                                                                                                                                                               InterPro; IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 458-498.
MEDLINE=75170265; PubMed=1169237;
                                                                                                                                                                      nflammatory
                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HMW I AND LMW I KININOGEN PRECURSORS PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNI SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y.N., Komiya M., Iwanaga S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                       TO RESIDUE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTION)
                                                                                   380
389
19
136
258
19
87
136
168
197
204
82
                                                                                                                                                                       response;
18
621
378
388
621
135
257
378
19
19
136
168
168
197
204
                                                                                                                                                                       Signal
                                                                                                                                                                                                      N
          OR 169.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
INTERCHAIN.
                                                                                  CYSTATIN-LIKE
CYSTATIN-LIKE
CYSTATIN-LIKE
                                                             PYRROLIDONE CARBOXYLIC N-LINKED (GLCNAC. . .)
                                                    PARTIAL.
                                                                                                                 BRADYKININ.
LIGHT CHAIN
                                                                                                                                       HEAVY CHAIN.
                                                                                                                                                    KININOGEN,
                                                                                                                                                                                  Blood
                                                                                                                                                                                                                                                                                                                                              There are no
                                                                                                                                                    MMH
                                                                                    ω N P
                                                                                                                                                                                coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        high-molecular-weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ('histidine-rich
                                                                                                                                                                                                                                                                                                                                                      and the
                                                                                                                                                                                                                                                                                                                                                                                                                                             ALTERNATE MRNA
                                                                                                                                                                                                                                                                                                                                                                   through
                                                                                                                                                                                                                                                                                                                                              restrictions on
                                                                                                                                                                                                                                                                                                                                                          EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                    þ
                                                                                                                                                                                                                                                                                                                                                          collaboration
L outstation -
```

```
RESULT E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΩУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTT
                                                                                                                                                                                                                                            Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.

C: IF FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

C: IF FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

C: HELPING TO POSITION OPTIMALLY PREKALLIKERIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBON-AND PLASMIN-

C: EMACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-

C: INDUCED AGGREGATION OF THROMBON-TES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4B) INFLUENCE IN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4B) INCREASE IN VASCULAR CONTRACTION, (4C) NATRIURESIS AND DIJURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION OF NOCICEPTORS (4E) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTACLANINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, (5) LMM-KININOGEN IS IN CONTRAST TO HMW-KININOGEN NOT INVOLVED IN BLOOD CLOTTING (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         008677; 008676;
01-0CT-2000 (Rel
01-0CT-2000 (Rel
01-0CT-2000 (Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                    the European Bioinformatics Institute. There are no rest
use by non-profit institutions as long as its content
modified and this statement is not removed. Usage by ar
                                       entities requires a license agreement (Some send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Takano M., Kondoh J., Yayama K., Okamoto H.;
"Molecular cloning of cDNAs for mouse low- and high- molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                 between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KNG_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
les 8; Conserv
                                                                                                                                                    TISSUE SPECIFICITY: PLASMA.

TISSUE SPECIFICITY: PLASMA.

PTM: BRADYKININ IS RELEASED FROM KININGEN BY
PTM: BRADYKININ 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                    SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW
PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                             SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GHKHKHDQGHGHHGSH 459
D84435;
D84415;
                                                                                                                the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       106
141
205
228
228
263
327
350
621 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Rel. 40, Created)
(Rel. 40, Last sequence update)
(Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Mouse)
BAA19743.1;
BAA19742.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     125
144
217
247
266
339
369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Ver
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D16850BEFE3C55CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                      (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vertebrata; E
thi; Muridae;
                                                                                                                                                                                                                     (SHOWN HERE) AND LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳.
                                                                  Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 621;
                                                                                                                and the
                                                                                                                                                                         PLASMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Murinae;
                                                                                                restrictions
                                                                     and
                                                                                                                 EMBL
                                                                                                                                                                         KALLIKREIN
                                                                                                                 a collaboration
                                                                                    Sī
                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                      .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus
                                                                                   'n
                                                                                                                                                                                                                     ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                8
                                                                                    no
                                                                                 way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                    VE4_HPV65
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                              VE4_HPV65
Q07873;
Q1-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
DISULFID
DISULFID
DISULFID
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                             Egawa K., Delius H., Matsukura T., Kawashima M., de Vill
"Two novel types of human papillomavirus, HPV 63 and HPV
comparisons of their clinical and histological features
                                                                                                                      SEQUENCE FKOM N.A.
MEDLINE=93276568; PubMed=8389082;
MEDLINE=93276568; PubMed=8389082;
MEDLINE=93276568; PubMed=8389082;
                                                                                                                                                                                    Human papillomavirus type (Viruses; dsDNA viruses, no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro: IPR003243; ...

Pfam; PF00031; cystatin; 3.

PRINTS; PR00334; KININOGEN.

PROSITE; PS00287; CYSTATIN; 1.

Glycoprotein; Plasma; Repeat;
                                                                      sequences to other HPV types.";
Virology 194:789-799(1993).
                                                                                                                                                                                                                       01-OCT-1994
01-OCT-1994
                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                        NCBI_TaxID=28312;
                                                                                                                                                                                                             PROBABLE E4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alternative splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bradykinin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MGD; MGI:1097705;
                                                                                                                                                                                                                                                                                                                                   471 GHQLKLDYLRHQREDGDDHTHTVGH 495
                                                                                                                                                                                                                                                                                                                                                         1 GHKFKLD------DDLEHQGGH 16
                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPR000010; -
                                                                                                                                                                                                                       (Rel.
                                                                                                                                                                                                              PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                            AA;
                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                       30,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kng.
                                                                                                                                                                                                                                                                                                                                                                                                                                            73102 MW;
                                                                                                                                                                                                                                                                                                                                                                                            44.18;
                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY.

OFOTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

VSPPYIAREOBERDAETEQGPTHGHGWLHEKQ -> RLRA

CEYKGRLSKAGAEPAPERQAESSQVKQ (IN ISOFORM
                                                                                                                                                                                   RNA stage;
                                                                                                                                                                                                                                                                                                                                                                                            Score 41.5;
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                     MISSING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INTERCHAIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HIS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KININOGEN LIGHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BRADYKININ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KININOGEN.
KININOGEN HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Thiol protease inhibitor; Vasodilator;
                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                            774460258D58796E
                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                           (IN ISOFORM LMW).
0258D58796E CRC64;
                                                                                                                                                                                                                                                                          213
                                                                                                                                                                                    Papovaviridae; Papillomavirus
                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                        AA
                                                                                                                                                                                                                                                                                                                                                                                                         DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   response;
                                                                                                                                                                                                                                                                                                                                                                                                        ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                        Length 661;
                                                                                                                         de Villiers
                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Signal;
                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                 9;
                                                                                                                      E.M.;
                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                1;
```

```
STITES OF THE STREET OF THE ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 1
PYB1_PEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SSECCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                               Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                     CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-94302176; PubMed-8079359;
MILLIamson C.L., Slocum R.D.;
MILLiamson C.L., Slocum R.D.;
Molecular cloning and characterization of the pyrB1 and pyrB2 genes encoding aspartate transcarbamoylase in pea (Pisum sativum L.).";
Plant Physiol. 105:377-384(1994).
Plant Physiol. 105:377-384(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PYB1_PEA STANDARD; PRT; 386 AA. 043086; 043086; 15-DEC-1998 (Rel. 37, Created) 15-DEC-1998 (Rel. 37, Last sequence update) 15-JUL-1999 (Rel. 38, Last annotation update) ASPARTATE CARBAMOYLTRANSFERASE 1 PRECURSOR (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                      PRINTS; PRO0100; AOTCASE.
PRINTS; PR00101; ATCASE.
PROSITE; PS00097; CARBAMOYLTRANSFERASE;
                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00185; OTCace; PRINTS; PR00100; AOTCAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M96981; AAA62443.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pisum sativum (Garden pea).
Eukaryota; Viridiplantae; E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE 21:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                            TRANSIT
                                                                                                                                                                                                                                                                         Pyrimidine biosynthesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Magnoliophyta; eud.
Fabales; Fabaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSCARBAMYLASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; x70829; CAA50175.1;
                                                                                                                                                                                                                                                  Multigene
                                                                                                                                                                                                                                                                                                                                                                                                                        [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=3888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PATHMAY: SECOND STEP IN PYREMIDINE BIOSYNTHESIS.
SUBUNIT: HOMOTRIMER (POTENTIAL).
SIMILARITY: BELONGS TO THE ATCASES/OTCASES FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORTHOPHOSPHATE + N-CARBAMOYLASPARTATE.
ENZYME REGULATION: ALLOSTERICALLY REGULATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GYEYDEDDDKENQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHKFKLDDDLEHQG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                     IPR002029; -. IPR002082; -.
                                                                                                                                                                                                                                                  family.
                                                                                                                                                                     386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          213
                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     idiplantae; Embryophyta; Tracheophyta; eudicotyledons; core eudicots; Rosidaceae; Papilionoideae; Pisum.
                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=Leaf;
                                                                                                                                                                                                  386
                                                                                                                                                                     42617
                                                      43.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (ATCASE 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24669 MW;
                                                                                                                                                                                                                            ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43.6%;
                                                                                                                                                                                                                                                                            Transferase;
                                                                                                                                                                     MW;
                            Score 41; DB Pred. No. 18; 2; Mismatches
                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.
                                                                                                                                                                     ASPARTATE CARBAMOYLTRANSFERASE A9440F45474E29F4 CRC64;
                                                                                                                                                                                                                         CHLOROPLAST (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D6DD198302D24D43 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                      Chloroplast; Transit peptide;
                                                   DB
18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BB
                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                               ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    pophyta; Spermatophyta;
Rosidae; eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                  Length 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2.1.3.2) (ASPARTATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                               Gaps
                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
RESULT
MTL1_LA
ID MT
AC P3
DT 01
DT 01
DT 01
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOLUTION OF THE WAY AND DESCRIPTION OF THE WAY A
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                _LACLA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PYRB3
                                                                                                                                                                                                                                                                            80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ш
```

```
Query Match
Best Local
    MTL1_LACLA
P35516;
01-JUN-1994 ()
01-JUN-1994 ()
01-OCT-2000 ()
MODIFICATION )
                                                                                                                                                                                                                                                                                                                                                                             CHAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PYB3_PEA
Q43064;
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Characterization of a cDNA encoding a third aspartate transcarbamoylase (pyrB3) from pea.";
(In) Plant Gene Register PGR96-063.
-!- CATALYTIC ACTIVITY: CARBAMOYL-PHOSPHATE + ASPARTATE ORTHOPHOSPHATE + N-CARBAMOYLASPARTATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR002082; -.
Pfam; PF00185; OTCace;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U05293; AAB67857.1; -. InterPro; IPR002029; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=CV. WANDO; TO Williamson C.L., To
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
ASPARTATE CARBAMOYLTRANSFERASE 3 PRECURSOR (EC
TRANSCARBAMYLASE 3) (ATCASE 3).
                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSIT
                                                                                                                                                                                                                                                                                                                                                                                                                                        Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pyrimidine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PR00101; ATCASE PROSITE; PS00097; CARBAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fabales; Fabaceae;
NCBI_TaxID=3888;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pisum sativum (Garden pea)
Eukaryota; Viridiplantae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- SIMILARITY: BELONGS TO THE ATCASES/OTCASES FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                                                          1 GHKFKLDDDLEHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENZYME REGULATION: ALLOSTERICALLY REGULATED PATHWAY: SECOND STEP IN PYRIMIDINE BIOSYNTHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBUNIT: HOMOTRIMER
                                                                                                                                                                                                    GOKFOLDDVIEAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHKFKLDDDLEHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GOKFOLDDVIEAQ
                                                                                                                                                                                                                                                                               Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PR00100; AOTCASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the Swiss Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                           biosynthesis; Transferase;
                                                                                                                                                                                                                                                                                                                                                                               391 AA;
                      (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                 Conservative
(Rel. 29, Created)
(Rel. 29, Last sequence update)
(Rel. 40, Last annotation update)
METHYLASE LLAI (EC 2.1.1.72) (ADENINE-SPECIFIC
                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBAMOYLTRANSFERASE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Leaf;
                                                                                                                                                                                                    92
                                                                                                                                                                                                                                        13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                   391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Papilionoideae; Pisum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     87
                                                                                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                               43.
                                                                                                                                                                                                                                                                                                                                                                               44343
                                                                                                                                                                                                                                                                                                 .58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Slocum R.D.;
                                                                                                                                                                                                                                                                                                                                                                                 Œ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Embryophyta; Tracheophyta; Spermatophyta;
lons; core eudicots; Rosidae; eurosids I;
                                                                                                                                                                                                                                                                             Score 41; DB Pred. No. 19; 2; Mismatches
                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                               ASPARTATE CARBAMOYLTRANSFERASE 5693EBC634FAEBA9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                      CHLOROPLAST (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of Bioinformatics
                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                    622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       391
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chloroplast; Transit peptide;
                                                                                                                                                                                                                                                                                             DB
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BIOSYNTHESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rmatics and the EMBL outst
There are no restrictions
ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                    B
                                                                                                                                                                                                                                                                                                                    ۲
                                                                                                                                                                                                                                                                                                                    Length 391;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2.1.3.2) (ASPARTATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ву имр
                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL outstation
                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                             Gaps
```

```
YOR1_YEAST
                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                     Saccharomyces cerevisiae (Baker's yeas Eukaryota; Fungi; Ascomycota; Saccharomycetales; Saccharomycetaceae;
                                                                                                                                                             01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence up
15-JUL-1998 (Rel. 36, Last annotation
OLIGOMYCIN RESISTANCE ATP-DEPENDENT PP
YOR1 OR YGR281W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entre the European Bioinformatics Institute. There are no restuse by non-profit institutions as long as its content use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
cerevisiae
                                     Katzmann D.J.,
Volckaert G., N
                                                               SEQUENCE FROM N.A. MEDLINE=96069397; PubMed=8524254;
                                                                                                                                                                                                                                                                                                                                                                                                                                        Transferase; Methyltransferase; Restriction system; Repeat; SEQUENCE 622 AA; 72512 MW; 69A817F46BE9C772 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR002294; -.
Pfam; PF02086; MethyltransfD12;
PRINTS; PR00505; D12M6MTFRASE.
PROSITE; PS00092; N6_MTASE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIR; A47029; A47029.
REBASE; 3437; M.LlaI.
InterPro; IPR002052; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LLAIM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               methylase between lactococcal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmid
(YOR1) is required cerevisiae.";
                      Expression of an ATP-binding cassette transporter-encoding gene
                                                                                                                                                                                                                                                 YOR1_YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U17233; AAA65073.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bacteriophage."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "In vivo genetic exchange of a functional domain from a type methylase between lactococcal plasmid pTR2030 and a virulent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=91294179; PubMed=1906061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lactococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METHYLTRANSFERASE LLAI)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lactococcus lactis
                                                                                                                                                                                                                                                                                                                    567
                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteriol. 173:4363-4370(1991).
- FUNCTION: METHYLATION OF SPECIFIC BOTH RESTRICTION AND MODIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATALYTIC ACTIVITY: S-ADENOSYL-L-METHIONINE + DNA ADENINE = S-ADENOSYL-L-HOMOCYSTEINE + DNA 6-METHYLAMTOURINE.
SIMILARITY: CONTAINS TWO COPIES OF A SEGMENT OF FOUR AMINO ACIDS WHICH IS CHARACTERISTIC OF ADENINE-SPECIFIC METHYLASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NONPALINDROMIC
                                                                                                                                                                                                                                                                                                                 GKKFMLSNVLEHKG
                                                                                                                                                                                                                                                                                                                                           GHKFKLDDDLEHQG
                                                                                                                                                                                                                                                                                                                                                                      Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PTR2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Miller L.A.,
                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                     Moye-Rowley W.S.;
                                                                                                                                                                                                                                               STANDARD;
            for oligomycin resistance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (subsp.
                                                                                                                                                                                                                                                                                                                 580
                                                                                                                                                                                                                                                                                                                                           14
                                                                                                                                                                                                                                                                                                                                                                                  43.6%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Klaenhammer T.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (M.LLAI).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     lactis) (Streptococcus lactis).
                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
                                                                                                                                   er's yeast).
Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                  No.
                                                                                                                                                                             on update)
                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADENINE RESIDUES; REQUIRED ACTIVITIES. MAY RECOGNIZE A
                                                                                                                                                                                                                                                                                                                                                                                DB
32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ormatics and the EMBL outst
There are no restrictions
ong as its content is in
                                                                                                                        Saccharomyces
                                                  Wysock W., Golin J.,
                                                                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                1;
            ä
                                                                                                                                                                               YOR1
                                                                                                                                                                                                                                                                                                                                                                     4;
                                                                                                                                                                                                                                                                                                                                                                                               Length 622
            Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a collaboration
                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plasmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΙΙ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               outstation
                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ⊳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ıts
way
                                                                                                                                                                                                                                                                                                                                                                     0,
```

RESULT 14
CBX4\_MOUSE
ID CBX4\_MOUSE
AC 055187;
DT 01-0CT-2000 0
DT 01-0CT-2000 0
DT 01-0CT-2000 0

STANDARD;

551

Ā

(Rel. (Rel. (Rel.

40,

Created)

Last sequence update)
Last annotation update)

δÃ

N

16

밁

1352

HKFHLDQAVEEEGSN 1366 HKFKLDDDLEHQGGH

```
Query Match
Best Local S
Matches 7
                                                                                                                                                        CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                       NP_BIND
                                                                                                                                                                                                                                                                                                                 TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM .....
STRAIN-S288C / FY1679;
MEDLINE-97245295; PubMed=9090054;
Volckaert G., Voet M., Robben J.;
Volckaert G., Voet M., Robben J.;
"Sequence analysis of a near-subtelomeric 35.4 kb DNA segment on the "Sequence analysis of a near-subtelomeric 35.4 kb DNA segment on the right arm of chromosome VII from Saccharomyces cerevisiae carrying the MAL1 locus reveals 15 complete open reading frames, including the MAL1 locus reveals 15 complete open reading frames, including
                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; Z73066; CAA97312.1;
HSSP; P13569; 1NBD.
SGD; S0003513; YOR1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restricted the succession of the successio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZUO1, BGL2 and BIO2 genes and an ABC transporter Yeast 13:251-259(1997).
-!- FUNCTION: REQUIRED FOR OLIGOMYCIN RESISTANCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00664; Pfam; PF00005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
-!- SIMILARITY: BELONGS TO THE ATP-BINDING TRANSPORT (ABC TRANSPORTERS). MDR SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N. STRAIN-S288C / F
                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cell.
  Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR001617;
                                                                                                                                                                                                                                                         621
1247
                                                                                                                                                                                                                                                                                                                                      207
250
329
350
434
479
616
616
893
941
1028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biol. 15:6875-6883(1995).
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABC_tran;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ABC_membrane;
                                                                                                   AA;
                                                                                                                                                                                                                                                       499
636
913
961
1048
1138
1162
628
                                                                                                                     1366
                                                                                                                                        295
661
759
799
1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABC_TRANSPORTER;
                      43.6%;
                                                                                                   166727
                                                                                                   N-LINKED MW; 40C5D
                                                                                                                                                    N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                    Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                        N-LINKED
                                                                                                                                                                                                                                                         ATP (POTENTIAL)
ATP (POTENTIAL)
                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                        POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ycoprotein;
  Mismatches
                                                                                                   40C5D36CA9B6A8C5
                                                                                                                     (GLCNAC.
                    DB
84;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as its content
                                         ۳,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
    5
                                       Length 1477;
                                                                                                   CRC64;
                                                                                                                                    (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γd
                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    is
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           collaboration -
L outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    on
  0
```

```
CBX4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
"~+~hes 8; Conserv
                                                                                                                                                                                                                                                                                                                        CBX4_HUMAN
000257;
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                          _HUMAN
TISSUE-Fetal brain;
MEDLINE-97459707; PubMed-9315667;
Satijn D.P.E., Olson D.J., van der Vlag J., Hamer K.M.,
Masselink H., Gunster M.J., Sewalt R.G.A.B., van Driel
                                                                                                                                                                                                                                                       01-0CT-2000 (Rel. 40, Created)
01-0CT-2000 (Rel. 40, Last sand
01-0CT-2000 (Rel. 40, Last and
CHROMOBOX PROTEIN HOMOLOG 4 (PO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "MPC2, a new murine homolog of the Drosophila polycomb protein is a member of the mouse polycomb transcriptional repressor complex.";
J. Mol. Biol. 273:993-1003(1997).
-1- FUNCTION: INVOLVED IN MAINTAINING THE TRANSCRIPTIONALLY REPRESSIVE STATE OF GENES. MODIFIES CHROMATIN, RENDERING IT HERITABLY CHANGED IN THE TRANSCRIPTIONALLY REPRESSIVE
                                                                                                                                                          Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; I
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chromatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRINTS; PR00504; CHROMODOMAIN. PROSITE; PS00598; CHROMO_1; 1. PROSITE; PS50013; CHROMO_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MGD; MGI:1195985; Cb;
InterPro; IPR000953;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U63387; AAB96874.1; HSSP; P23197; 1AP0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alkema M.J., Jacobs J., Voncken J.W., Jenkins N.A., Cop
Satijn D.P.E., Otte A.P., Berns A., van Lohuizen M.;
"MPC2, a new murine homolog of the Drosophila polycomb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHROMOBOX PROTEIN HOMOLOG 4 (POLYCOMB 2 HOMOLOG) (PC2) (MPC2). CBX4 OR MPC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Repressor.
DOMAIN
                                                                                               SEQUENCE FROM N.A.
                                                                                                                                       NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        wEDLINE=98035734; PubMed=9367786;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 HKFKLDD----DLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT: COMPONENT OF THE CHROMATIN-ASSOCIATED POLYCOMB COMPLEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: CONTAINS 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: NUCLEAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IN ITS EXPRESSIBILITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HPYQPDPKMYDLQYQGGH 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            regulator; Nuclear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
383
551 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     chromo; 1
                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cbx4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                69 C
395 P
60581 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43.1%;
                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
OLOG 4 (POLYCOMB 2 HOMOLOG) (PC2) (HPC2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'CHROMO' DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 40.5;
Pred. No. 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLY-HIS:
; 30CEB09A82C58400 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHROMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein;
                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                       558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Transcription regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      There are no restrictions ing as its content is in
                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲,
  van Driel R., Otte A.P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  w
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Euteleostomi;
; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Copeland N.G
                       Lambrechts C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۳.
```

밁

Search completed: July Job time: 971 sec

6

2001,

09:26:40

δÃ

```
밁
                                                   Š
                                                                                Query Match
Best Local Similarity
Thehas 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             as a transcriptional repressor.";
MO1. Cell. Biol. 17:4105-4113(1997).
-i- FUNCTION: INVOLVED IN MAINTAINING THE TRANSCRIPTIONALLY REPRESSIVE
STATE OF GENES. MODIFIES CHROMATIN, RENDERING IT HERITABLY CHANGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF013956; AAB80718.1; -.
EMBL; U94344; AAB62734.1; -.
MIM; 603079; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PR00504; CHROMODOMAIN. PROSITE; PS00598; CHROMO_1; 1. PROSITE; PS50013; CHROMO_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000953; -. Pfam; PF00385; chromo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   esu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Satijn D.P.E., Gunster M.J., van der viag J., namer N.M., Journ A.J., Freemont P.S., van Driel R., Otte A.P.; alkema M.J., Saurin A.J., Freemont P.S., van Driel R., Otte A.P.; alkema M.J., Saurin A.J., Freemont P.S., van Driel R., Otte A.P.; alkema M.J., Saurin A.J., Freemont P.S., van Driel R., Otte A.P.; alkema M.J., van der viag J., namer N.J., van der viag J., van der viag J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Interference with the expression of a novel human polycomb protein, hPc2, results in cellular transformation and apoptosis."; Mol. Cell. Biol. 17:6076-6086(1997).
                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                         Chromatin regulator; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- TISSUE SPECIFICITY:
-!- SIMILARITY: CONTAIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBCELLULAR LOCATION: NUCLEAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=97342649; PubMed=9199346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 455-558 FROM
                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                  Repressor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP; P23197; 1AP0
158 HPYQPDPKMYDLQYQGGH 175
                                                         Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: COMPONENT OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IN ITS EXPRESSIBILITY
                                                      HKFKLDD----DLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                non-profit institutions as long
                                                                                                                                                                                                                                                     16
383
499
558 /
                                                                                                             Conservative
                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IFICITY: UBIQUITOUS. CONTAINS 1 'CHROMO'
                                                                                                                                                                                                                                                     69 C
398 P
508 P
61228 MW;
                                                                                                                                    43.18;
44.48;
                                                      16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THE CHROMATIN-ASSOCIATED POLYCOMB COMPLEX
                                                                                                             4;
                                                                                                                                                                                                                                                                                                           CHROMO.
POLY-HIS.
                                                                                                                                       Score 40.5;
Pred. No. 34;
                                                                                                                                                                                                                                                     POLY-ALA.
7158526991D33463 CRC64;
                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                            Transcription regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib.ch/announce/
                                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                 1;
                                                                                                             Ψ
                                                                                                                                                                 Length
                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   рy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and for
                                                                                                                                                                    558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a collaboration -
MBL outstation -
                                                                                                          Ψ
                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commercial
                                                                                                          ۲;
```

1						
•						
			·			
				<u>.</u> *		
					•	
			·			
•						
٠.		,				
	•					

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                     SPTREMBL_16:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-437-912-7
94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             July
                                                                                                                                                                                                                                                                                                                                                                                                                          425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                sp_phage: *
                                                                                                                                                                                                                     sp_archea:*
                                                                                                                                                                                                       sp_bacteria:*
                                                                                                   sp_organelle:*
                                                                                                                 sp_mhc:*
                                                                                                                                    sp_mammal:*
                                                                                                                                                      sp_invertebrate:*
                                                                                                                                                                       sp_human:*
sp_virus:*
             sp_unclassified:*
sp_vertebrate:*
                                                  sp_rodent:*
                                                              sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6, 2001, 09:25:55; Search time 118.42 Seconds (without alignments) 17.876 Million cell updates/sec
                                                                                                                                                                                       fungi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                           425026
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Ţ	1 6	10	17	16	15	14	13	12	11	10	9	œ	7	6	5	4	w	2	1	No.	Result	
# H		4	41	42	42	42	42.5	43	43	43	. 43	43	44	44	44	45	45	45	45	Score		
40.0	5.0	7	43.6	44.7	44.7						45.7									Match Length	Ouery	Þ
£ 0 /	10	77.	335	1826	718	648	126	2747	683	299	296	187	681	541	279	410	239	239	236			
Ų	٩.	J	10	G	ഗ	U	11	N	ø	σ		10	Ŋ	N	ഗ	4	10	10	10	DB		
Ø20221	20100	ODVALIO	Q9LX44	097255	Q9XYY9	Q9VXP2	009016	Q9L800	Q9T215	Q22856	Q91802	Q9FII9	Q9VEA9	Q925A6	Q9VDL1	Q9NXU1	Q9SBF1	081253	081250	ID		
Ozozzi ilyhelioseta	משארמב יו ביייין	005+113 1135110 0501	09lx44 arabidopsis	097255 plasmodium	Q9xyy9 drosophila	Q9vxp2 drosophila	009016 rattus norv	Q91800 aeromonas s	Q9t215 bacteriopha	Q22856 caenorhabdi	Q91802 xenopus lae	Q9fii9 arabidopsis	Q9vea9 drosophila	Q9z5a6 streptomyce		Q9nxu1 homo sapien	Q9sbfl zea mays su	081253 zea mays su	081250 zea mays su	Description		

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41
42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	42.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6	43.6
670	619	596	536	489	407	317	315	314	311	268	262	262	245	174	87	1878	1235	1164	959	920	856	757	598	499	477
4	σ	11	σ	N	14	4	9	11	N	10	14	14	ഗ	N	10	10	4	ഗ	ഗ	4	υ	4	14	w	4
Q9Y6R3	Q9VYV5	Q9JJG2	045994	Q9X873	Q9YMK8	014780	Q9XSC1	Q9WU66									Q9Н0Е9	Q9VCE7	018359	043178	Q9V706	Q15355	Q9YW15	P87212	Q9Y577
	Ø		0			0	e.	_	Q	_	_	_	Ø.	Q	_	_	Q	į.	0.	o	Q	Ø	_	P	Q
9y6r3 homo sapien	9vyv5 drosophila	Q9jjg2 mus musculu	45994 caenorhabdi	9x873 streptomyce	Q9ymk8 lymantria d	014780 homo sapien	9xscl bos taurus	Q9wu66 mus musculu	)9kwm8 pseudomonas	Q91wc2 oryza sativ	Q9ipq5 bovine vira	Q9ipq6 bovine vira	21616 caenorhabdi	9kfh6 bacillus ha	Q9lfql arabidopsis	Q9syj7 arabidopsis	9h0e9 homo sapien	)9vce7 drosophila	)18359 drosophila	43178 homo sapien	_	)15355 homo sapien	Q9yw15 melanoplus		29y577 homo sapien

## ALIGNMENTS

```
RESULT
OB 1250
AC O8
AC O8
AC O8
AC O8
O7 07 07
D7 07 07
O7 
RESULT 2
O81253
ID 081253
                                                                                                                                                                                              Вр
                                                                                                                                                                                                                                                                   QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P SEQUENCE FROM N.A.

A Hilton H., Gaut B.S.;

T "Speciation and domestication in maize and its wild relatives:

T evidence from the Globulin-1 gene.";

I Genetics 0:0-0(1998).

R EMBL; AF064213; AAC31456.1; -.

R HSSP; P50477; ICAU.

R Mendel; 31892; Zeama;1188;31892.

R InterPro; IPR000901; -.

R InterPro; IPR00010113; -.

R Pfam; PF00546; Seedstore_7s; 1.

R PGNSITE; PS00867; CPSASE_2; UNKNOWN_1.

SEQUENCE 236 AA; 27019 MW; 1F3D9BD92C03ZE05 CRC64;
                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O81250; PRELIMINARY; 081250; 01-NOV-1998 (Tremblrel. 08, 01-NOV-1998 (Tremblrel. 15, 01-OCT-2000 (Tremblrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             www.youd; viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea mays subsp. mays (maize).
Eukaryota; Viridiplantae; Emb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GLOBULIN-1 (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=4578;
                                                                                                                                                                                              26
                                                                                                                                                                                                                                                  7 DDDLEHQGGH 16
                                                                                                                                                                                              DDNLHHHGGH 35
                                                                                                                                                                                                                                                                                                                                                        Conservative
    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                        47.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                Score 45; DB 10;
Pred. No. 17;
1; Mismatches 2;
    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
    239 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                        2,
                                                                                                                                                                                                                                                                                                                                                                                                                            Length 236;
                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                        0;
```

```
₽
                                          Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
Q9SBF1
                                                                                                                                                                                                                       ACCOMPANDATION ACCOMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                            Matches
                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
Hilton H., Gaut B.S.;
"Speciation and domestication in maize and its wild relatives:
"Speciation and domestication in maize and its wild relatives:
evidence from the Globulin-1 gene.";
Genetics 0:0-0(1998).
Genetics 0:0-0(1998).
GENBL; AF064218; AAC31461.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zea mays subsp. mays (maize).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae
Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-007-2000 (TrEMBLrel. 15, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000901; -.
InterPro; IPR001113; -.
Pfam; PF00546; Seedstore_7s; 1.
PROSITE; PS00867; CPSASE_2; UNKNOWN_1.
NON_TER 239 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Speciation and domestication in maize evidence from the Globulin-1 gene.";
Genetics 0:0-0(1998).
                                                                                                                                                                                                                                                                                             InterPro; IPR000901; -.
InterPro; IPR0011113; -.
Pfam; PF00546; Seedstor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9SBF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AF064216; AAC31459.1; -. HSSP; P50477; 1CAU. Mendel; 31895; Zeama;1188;31895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays subsp. mays (maize).
Eukaryota; Viridiplantae; Emb
Magnollophyta; Liliopsida; Po
Andropogoneae; Zea.
                                                                                                                                                                                                                                                NON_TER
                                                                                                                                                                                                                                                               PROSITE; PS00867; CPSASE_2; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                      HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=4578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLOBULIN-1 (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GLOBULIN-1 (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
01-CCT-2000 (TrEMBLrel. 15, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=4578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity hes 7; Conserv
26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26 DDNLHHHGGH 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7 DDDLEHQGGH 16
DDNLHHHGGH
                                             DDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                 P50477;
                                                                                          l Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           239 AA;
                                                                                                                                                                                                                    239
                                                                                          Conservative
                                                                                                                                                                                                                                                239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                   1CAU
                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                        Seedstore_7s; 1.
                                                                                                                                                                                                                                                239
                                                                                                                                                                                                                    27499 MW;
                                                                                                                   47.9%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27384 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47.9%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Embryophyta; Tracheophyta; Spermatophyta; Poales; Poaceae; PACC clade; Panicoideae
                                                                                            1;
                                                                                                                Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                  147C4F61F65307FA CRC64
                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           628924A8D7BA7773 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     239
                                                                                                           DB
17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                          2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            wild relatives:
                                                                                                                                       Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Panicoideae;
                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ٥,
                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
RX Addmis M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Hoskins R.A., Galle R.F.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Burandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Burandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Burandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Buril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Stangelista C.C., Ferraez C., Ferriera S., Fletschmann W.,
RA Borkova D., Bobriellan A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9VDL1;
Q9VDL1;
01-MAY-2000
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9NXU1;
01-OCT-2000
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Arthropoda; Tracneata; нехароца; ливесца, Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CG5412 PROTEIN. CG5412.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "NEDO human cDNA sequencing project.";
Submitted (FEB-2000) to the EMBL/GenBank/DDBJ databases
EMBL; AK000062; BAA90919.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-2000 (TrEMBLrel. 15, Create
01-OCT-2000 (TrEMBLrel. 15, Last s
01-OCT-2000 (TrEMBLrel. 15, Last a
CDNA FLJ20055 FIS, CLONE COL00943.
                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Okitani R., Ota T., Suzuki Y., Obayashi
Tanaka T., Nakamura Y., Isogai T., Sugar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9NXU1
                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kawabata A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=COLON;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184 GHRFKRSDITKKQDGH 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
nes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ) (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          410 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hikiji
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46716 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T., Kobatake N., Inagaki H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            47.9%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6E9C09639AC02CF3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             yashi M., Nishi T., Shibahara
Sugano S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ikema Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okamoto S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

```
OCCUPANT OCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Nelson D.R., Nelson K.A., Nixon K., Nuzskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Viiskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Zheng X.H., Zhong F.N., Zhon M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Robin G.M., Venter J.C.;
"The genome sequence of Drosophila melanogaster.";
REMBL; AE003731; AAF55780.1; -.
REMBL; AE003731; AAF55780.1; -.
REJUBASE; FBgn003886; CG5412.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9Z5A6;
01-MAY-1999
01-MAY-1999
01-MAY-2000
                                                                                                                            "A set of ordered cosmids and a detailed genetic and physical map the 8 Mb Streptomyces coelicolor A3(2) chromosome."; Mol. Microbiol. 21:77-96(1996). EMBL; AL035478; CAB36604.1; -. HSSP; P08659; LLCI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence
01-MAY-2000 (TrEMBLrel. 13, Last annotatio
PUTATIVE LONG-CHAIN-FATTY-ACID-COA LIGASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=A3(2);
Oliver K., Ha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SC2G5.17.
Streptomyces coelicolor.
                                                                                                                                                                                                                                                                                                                                                       STRAIN=A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9Z5A6
                                                 PROSITE;
                                                                                                                                                                                                                                                                 Redenbach M., Kieser H.M.,
Kinashi H., Hopwood D.A.;
                                                                                                                                                                                                                                                                                                                         MEDLINE=97000351; PubMed=8843436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bentley S.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      205 RFKNAEVLEHSGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 KFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6
                                                       PS00455;
                                                                                                         IPR000873; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (FEB-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                               (FEB-1999)
     541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Harris D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Parkhill
     AA;
                                                 AMP-binding; 1.
55; AMP_BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16
  59034 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46.8%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
J.,
                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                             Barrell B.G., Rajandream M.A.;
e EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                             Denapaite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 44;
Pred. No.
  CEB7374431F28CE5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                          D., Eichner A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                             Cullum J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

Query Matcl

46.8%;

Score 44;

DB 2;

Length 541;

```
RESULT
Q9VEA9
ID Q9
                                                                                                              RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beceson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E.; Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E.; Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Devies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Devies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Devies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Delcher A., Devis R., Garry N.S., Gelbart M.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Murphy D.M., Nelson D.L.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Menert K.R., Remington K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Puri V., Reese M.G.,
RA Shue B.C., Siden Kiamos I., Simpson M., Stropg R., Wang N., Wang N., Wang S., Wang Y., Wang 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9VEA9;
01-MAY-2000 (TrE
01-MAY-2000 (TrE
01-MAR-2001 (TrE
CG7156 PROTEIN.
CG7156.
SMART; SM00312; PX;
ATP-binding; Transfi
SEOUENCE 681 AA;
                                                                 PROSITE;
                                                                                  Pfam; PF00069;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster (Fruit fly)
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9VEA9
                                                                                                   InterPro; IPR000719; -. InterPro; IPR001683; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      348 RMDDDLEHRTG 358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 KLDDDLEHQGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                 PS50011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel. (TrEMBLrel.
    Transferase.
81 AA; 77072 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                  pkinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                             PROTEIN_KINASE_DOM; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.
    E28AE66C0E8384B4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       K.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ι.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ₹.
```

```
RESULT
Q9FII9
                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 6
 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                        Q91802;
01-NOV-1996;
01-NOV-1996;
01-JUN-2000
                                                     J. Cell Biol. EMBL; X56039;
                                                   Peculis B.A., Gall J.G.;
"Localization of the nucleolar protein J. Cell Biol. 116:1-14(1992).
EMBL; X56039; CAA39511.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                          physically assigned P1 and TAC clones."; DNA Res. 5:379-391(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=COLUMBIA;
MEDLINE=99156233; PubMed=10048488;
Asamizu E., Sato S., Kaneko T., Na
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, 01-MAR-2001 (TrEMBLrel. 16, EMB|CAB67623.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9FII9;
01-MAR-2001
                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                   091802
                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence features of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9FII9
                                                                                                 MEDLINE=92112947; PubMed=1730739;
                                                                                                             TISSUE=OVARY;
                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                          NCBI_TaxID=8355;
                                                                                                                                                                                    Xenopus laevis (African clawed frog)
                                                                                                                                                                                                                                                                                                                                                                                                                                               "Structural analysis of Arabidopsis thaliana Sequence features of the regions of 1,081,95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tabata S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                        144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 HKFKLDDDLEHQGGH
| | : | ||:||:
                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                        GENEKLEDEIDH
                                                                                                                                                                                                                                                                                                                            GHKFKLDDDLEH 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSFTVTDTQEHKGGY
                                                                                                                                                                                                                                                                                                                                                                                                                AB016886; BAB11339.1; -.
                                                                                                                                                                                                                                                                                                                                                 Similarity 50.6; Conservative
                                            296
                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                              (TrEMBLrel.
                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                    Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                        155
                                         32886 MW;
                                                                                                                                                                                                                                                                                                                                                                                                      21519 MW;
  45.7%;
                                                                                                                                                                                                                                                                                                                                                             45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16
                                                                                                                                                                                                         01,
01,
14,
                                                                                                                                                                                                       Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                              Score 43; DB Pred. No. 28; 4; Mismatches
  Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44;
Pred. No.
                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                     10C8D37AFE9FB41B CRC64;
                                           2D7D7751BF2C1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nakamura Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
  ¥3;
                                                                                                                                                                                                                                                   296 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187
                                                                                                                                                                                                                                                                                                                                                                                                                                               ,081,958
DB
45;
                                                                          NO38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ą
            13;
                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5.
                                                                          in
                                                                                                                                                                                                                                                                                                                                                                                                                                                           chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kotani H., Miyajima
                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                              bp covered by seventeer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ن</u>
                                                                         amphibian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 681;
                                           CRC64
                                                                                                                                                                                                                                                                                                                                                                    Length 187;
                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ა</u>
                                                                         oocytes.";
                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
Вþ
                                                                                                                                                                                                                                                QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                         Q9T215;
Q9T215;
Q1-MAY-2000
Q1-MAY-2000
Q1-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q22856;
Q22856;
Q1-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                           Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston L.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Lightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Riken L., Roopra A., Saunders D., Shownkeen I
Smaldon N., Smith A., Sonnhammer E., Staden R., Sulston J.,
Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.;
"2.2 Mb of contiguous nucleotide sequence from chromosome III of C.
                                                      Bacteriophage phi-C31.
Viruses; dsDNA viruses,
Lambda phage group.
NCBI_TaxID=10719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Caenorhabditis elegans.
Enkaryota; Metazoa; Nematoda;
Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
                      SEQUENCE FROM N.A.
STRAIN-NORWICH STOCK;
                                                                                                                                                                                                                                                                                                                                                              Nature 368:32-38(1994).
EMBL; Z75551; CAA99933.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Nemat
Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1996
01-OCT-2000
              Smith M.C.
                                                                                                                REPRESSOR.
                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002582;
Pfam; PF01648; ACPS;
                                                                                                                                                                                                                                                                                                                                                                                      elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kershaw
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T28H10.
                                                                                                                                                                                                                             188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T28H10.1 PROTEIN.
                                                                                                                                                                                                                                                                        Local Similarity
les 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         31 YSFKVDDENEHQ
                                                                                                                                                                                                                                                   2 HKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N
                                                                                                                                                                                                                             HTFQVDSSYDHASGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HKFKLDDDLEHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (JUN-1996)
                                                                                                                         ) (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                299
                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                               ACPS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42
                                                                                                                                                                                                                                                                                                                               34150 MW;
                                                                                                                                                                                                                             202
                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                  45.7%;
40.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                         13,
13,
                                                                              no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               oda; Chromadorea; Caenorhabditis.
                                                                              RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ψ
                                                                                                                                                                                                                                                                                  Score 43;
Pred. No.
                                                                                                                                                                       PRT;
                                                                             stage;
                                                                                                                                                                                                                                                                                                                               1FE8669DC3830CCA CRC64;
                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  299
                                                                                                                                                                       683
                                                                             Tailed phages; Siphoviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rhabditida; Rhabditoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                        6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                             Length 299
                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Α.
                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
RESULT
009016
ID 00
AC 00
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
Q9L800
                                                                                                                                                                                                                                                                                         Duery Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 7
            009016;
009016;
01-JUL-1997
01-JUL-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-0CT-2000
01-0CT-2000
01-MAR-2001
                                                                                                                                                                                                  2663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Braun M., Frey J., Kuhnert P.;
"280 kDa RTX protein of Aeromonas.";
"080 kDa RTX protein of Aeromonas.";
"180 kDa RTX prot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9L800;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-NORWICH STOCK;
MEDLINE-99238410; PubMed-10219087;
MEDLINE-99238410; PubMed-10219087;
Smith M.C. M., Burns N., Wilson R.N., Gregory M.A.;
"The complete genome sequence of the Streptomyces temperate phage C31:
"The complete genome sequence of the Streptomyces temperate phage C31:
"The complete genome sequence of the viruses.";
Nucleic Acids Res. 27:2145-2155(1999).

EMBL; AJ006589; CAA07123.1;
                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00313; CABNDNGRPT.
PROSITE; PS00018; EF_HAND; UNKNOWN_1.
PROSITE; PS00330; HEMOLYSIN_CALCIUM; 4.
SEQUENCE 2747 AA; 280202 MW; 208FE380E44A5F37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-ATCC 33658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9L800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STKAIN=NORWICH STOCK;
MEDLINE=99162580; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=645;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Aeromonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00353; hemolysinCabind;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hendrix R.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [2]
SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             474
                                                                                                                            13
                                                                                                                                                                                                                                             1 GHKFKLDDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7 DDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INE-99162580; PubMed-10051617;
rix R.W., Smith M.C.M., Burns N., Ford M.E.,
the world's a phage:";
. Natl. Acad. Sci. U.S.A. 96:2192-2197(1999)
                                                                                                                                                                                                GDKLDLSDLLDHDGSH 2678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DDDVERQGAH 483
                                                                                                                                                                                                                                                                                         Similarity 50.8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 70.07; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          salmonicida.
Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR002048; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.) (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         683 AA;
            (TrEMBLrel. 04, (TrEMBLrel. 04,
                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       73980 MW;
                                                                                                                                                                                                                                                                                                              45.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45.78;
70.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   : Score 43; DB
: Pred. No. 1e+0
1; Mismatches
         Created)
Last sequence update)
                                                                                                                                                                                                                                                                                      Score 43; DB
Pred. No. 4.26
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EC114A061EECA4BD CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        subdivision; Aeromonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2747 AA
                                                                                 126
                                                                                                                                                                                                                                                                                 DB 2; Len
. 4.2e+02;
. 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ford M.E., Hatfull G.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 9;
le+02;
                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                    Length 2747;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 683;
                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
Q9VXP2
            Query Match
Best Local Similarity
"~+~hes 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RA Addms M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addms M.D., Celniker S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Bortis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Ge Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Ge Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Durbin K.J., Bayrelian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9VXP2;
Q1-MAY-2000 (TrEMBLrel. 13,
Q1-MAY-2000 (TrEMBLrel. 13,
Q1-MAR-2001 (TrEMBLrel. 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KNGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RHP OR CG8497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9VXP2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-DONRYU;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TrEMBLrel. 15,
K-KININOGEN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AF003623; AAC09070.1; InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kininogen genes allow mapping Mamm. Genome 8:791-792(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jacob H.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Harris E.L., Grigor M.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=97468288;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strain-specific deletions in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHQLKLDDLKQQREDGYDHRHPVGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHKFKLDD------DLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PR00334; KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   126
126 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=9321484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14092 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42.5; D
Pred. No. 23;
l; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        exon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9CCDF8751DA49C88 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  both
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Harrap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  to rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        K-kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ს</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
```

Ş

뫄

QУ

Дb

```
RESULT QSXYY9
ID Q9,
AC Q9,
AC Q9,
DT Q1,
DT
                                                       δÃ
   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Mount S.M., Noy M., Murphy B., Murphy L., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Reminqton K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Sylrathing A.C., Stapleton M., Strong R., Sun E.,
Sylrathing A.C., Tunner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhang C., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Smith H.O.,
RA Zheng X.H., Sesquence of Drosophila melanogaster.";
RI Sclence 287:2185-2195(2000).
REMBL: AE003500: ABF48516.1; -.
REMBL: AE003500: ABF48516.1; -.
                                                                                                              Query Match 44.7
Best Local Similarity 70.0
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                   FlyBase; FBgn0026374; Rhp. InterPro; IPR000861; -. InterPro; IPR001478; -. Pfam; PF00595; PDZ; 1. Pfam; PF002195; HRI; 1. SMART; SM00228; PDZ; 1. SEQUENCE 718 AA; 80826 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9XYY9;
01-NOV-1999
01-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Edwards K.A., Kaneshiro K., Yamamoto D.;
"Mutations in the Drosophila Rhophilin gene at 13E.";
Submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF132025; AAD31273.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequ
01-MAR-2001 (TrEMBLrel. 16, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FlyBase; FBgn0026374; Rhp.
InterPro; IPR001478; -.
Ffam; PF00595; PDZ; 1.
SMART; SM00228; PDZ; 1.
SMART; SM00228; PDZ; 1.
85EQUENCE 648 AA; 72858 MW; 85EE4EBC6947D45D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RHP OR CG8497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9XYY9
559 DDDEEHDGGY 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15
                                   7 DDDLEHQGGH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7 DDDLEHQGGH 16
||| || ||:
89 DDDEEHDGGY 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                          80826 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.78;
70.08;
                                                                                                                                                  44.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                        ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1; Mismatches
                                                                                                                                                  Score 42; DB 5;
Pred. No. 1.6e+02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42; DB 5;
Pred. No. 1.4e+02;
                                                                                                                                                                                                                                                                             AF9DD0C57132AA31 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       718 AA.
                                                                                                                    2; Indels
                                                                                                                                                                            Length 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 648;
                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
```

Search completed: July 6,

2001,

09:25:55

Job time: 991 sec

```
RESULT
CH38_DF
 RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Abril J.F., Adybayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies S.M.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dayra Rocha S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.K., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Merkulov G., Milshina N.Y., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy I., Marphy D. Malecon R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SQ SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                      Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Aburner M., Henderson S.N., George R.A., Lewis S.E., Richards S., Abang Q., Chen L.X., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D. Brandon R.C., Rogers Y.-H.C., Blazej R.G., Nelson C.R., Miklos G.L.G. Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-APR-1988 (Rel.
01-APR-1988 (Rel.
01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fungicide;
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CP38 OR S38 OR CG1121.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Amplification of the X-linked Drosophila chorion gene cluster requires a region upstream from the s38 chorion gene."; EMBO J. 6:1045-1053(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-87246506; PubMed-3036489;
Spradling A.C., de Cicco D.V., Wa
Kalfayan L.J., Cooley L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHORION PROTEIN S38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CH38_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ephydroidea; Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D13797;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 KHGHG--HGKH---KNKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QHGHGGQHGQHDGYKNRG 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A45969;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9W3E5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        85 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19
19
19
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A45969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BAA02954.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        de Cicco D.V., Wakimoto B.T., Levine J.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07, Last sequence update)
40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
85
73
73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     55
55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 5%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 48.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E381779F923FB69B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL.
ANTIFUNGAL PROTEIN.
2 x 7 AA REPEATS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
Murphy L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q-H-G-H-G-G-Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ņ
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOUR BEAUTION OF THE COLOR OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       YBCZ_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Na Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
A Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
A Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
A Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
A Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Syirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
A Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
A Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
A Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng X.H., Zhong S.A., Myers E.W., Rubin G.M., Venter J.C.;
"The genome sequence of Drosophila melanogaster.";
Science 287.2185-2195(2000).
                                                                                                                                                                                                                                                      Mau B., Shao Y.; "The complete genome sequence of Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                   MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T.
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., N
Gregor J., Davis N.W., Kirkpatrick.H.A., Goeden M.A.,
                                                                                               Chung E., Allen E., Araujo R., Aparicio A., Davis K., Duncan M. Federspiel N., Hyman R., Kalman S., Komp C., Kurdi O., Lew H., Namath A., Oefner P., Roberts D., Schramm S., Davis R.W., Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. STRAIN=K12 / MG165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Escherichia coli.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P77485;
01-NOV-1997
                                              -!- FUNCTION: PROBABLE MEMBER OF A TWO-COMPONENT REGULATORY SYSTEM YBCZ/YLCA, MAY ACTIVATE YLCA BY PHOSPHORYLATION.
                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YBCZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROBABLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YBCZ_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chorion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FlyBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AE003444;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; X05245; CAA28871.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  207
                        SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  нснснссн
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HGHGHGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S08607; S08607.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      997 (Rel. 35, Created)
997 (Rel. 35, Last sequence update
997 (Rel. 35, Last annotation update
997 (Rel. 35, Last annotation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FBgn0000360; Cp38
                                                                                                                                                                                                                                                                                                                                                                                                                                                   / MG1655;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                             N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAF46383.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30448 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49.0%;
87.5%;
                        INTEGRAL MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 48; DB Pred. No. 2.9; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2F51C96F9F82DF83 CRC64;
                                                                                                                                                                                                                                                                                    Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
2.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA
                                                                                                                                                                                                                                                                                                                                                              Rode C.K., Mayhew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as
                           PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 306;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    уd
                        INNER MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      restrictions
                                                                                                                                                                                                                                                                                                                                           Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                            Burland V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Reese M.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zheng L.,
Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collaboration
                                                                                                                                                         Lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Me
Pterygota; Ne
Ephydroidea;
 PIR; A41 FlyBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P25123; Q26302; (P01-MAY-1992 (Rel. 22, Created) 01-MAY-1992 (Rel. 22, Last sequence update) 15-JUL-1998 (Rel. 36, Last annotation update) GAMMA-AMINOBUTYRIC-ACID RECEPTOR BETA SUBUNIT RECEPTOR) (CYCLODIENE RESISTANCE PROTEIN).
                                                                               between the Swiss Institute of Bioinformat the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                     alternative splicing.";
J. Neurochem. 60:2323-2326(1993).
-i- FUNCTION: GABA, AN INNIBITORY NEUROTRANSMITTER,
INHIBITION BY BINDING TO THE GABA RECEPTOR AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAB_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                      EMBL; M69057; AAA28556.1; EMBL; S61113; AAB26669.1;
                                                        entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                               MEDLINE=93260477; PubMed=7684073; Ffrench-Constant R.H., Rocheleau
                                                                                                                                                                                                                                                                                                                                                                        Drosophila: an invertebrate receptor locus.";
                                                                                                                                                                                                                                                                                                                                                                                                        ffrench-Constant R.H., Mortlock D.P.,
Macintyre R.J., Roush R.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A. MEDLINE=91334435; PubMed=1651498;
                                                                                                                                                                                                                                                                                                  "Drosophila gamma-aminobutyric acid
                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 70-113 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                "Molecular cloning and transformation of cyclodiene Drosophila: an invertebrate gamma-aminobutyric acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DictyDb; DD05011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 HGHGHGKHKNKGK 14
                                                                                                                                                                    SIMILARITY:
CAUTION: IT
                                                                                                                                                                                                    SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
MISCELLANEOUS: RESISTANCE IS THOUGHT TO BE DUE TO INSENSITIVITY OF
THE CYCLODIENE/PICROTOXININ BINDING SITE ON THE GABA(A) RECEPTOR-
                                                                                                                                                                   CHLORIDE IONOPHORE COMPLEX.
SIMILARITY: BELONGS TO THE LIGAND-GATED CAUTION: IT IS UNCERTAIN WHETHER MET-1,
                                                                                                                                                         INITIATOR.
                                                                                                                                                                                                                                            CHLORIDE CHANNEL.
             A41145; A41145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; X16827; CAA34727.1; S08137; S08137.
                                                                                                                               SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGNGHGPHGHGGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Neoptera; Endopto
; Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Metazoa; Arthropoda;
                                                                                                                                                                                                                                                                                                                                                             Acad. Sci. U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26
94
8836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Artnropoda; Tracheata; Hexapoda; Insecta;
Endopterygota; Diptera; Brachycera; Musc
ilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ?;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SER-RICH.
GLY-RICH.
BD7BFDF649EB1D50 CRC64;
                                                                                                                                                                                                                                                                                                                                                             88:7209-7213(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                    Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                 H
                                                                                                                                                                                                                                                                                                                Α.,
                                                                                                                                                                                                                                                                                                  receptor gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  606
                                                                                                                                                                                                                                                                                                                                                                                                                      Shaffer C.D.,
                                                                       (See http://www.isb-sib.ch/announce/
                                                                                            There are nong as its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ۳.
                                                                                                                                                                    IONIC
                                                                                 Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRECURSOR (GABA(A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 98
                                                                                                                     and
                                                                                                                                                                    OR MET-12
                                                                                                                                                                                                                                                                                                 Rdl shows
                                                                                               content
                                                                                                         no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                     , MEDIATES NEURONAL OPENING AN INTEGRAL
                                                                                 γd
                                                                                                                      the
                                                                                                                                                                                                                                                                                                                                                                                   resistance
subtype A
                                                                                                                                                                     MET-12
                                                                                  and
                                                                                                                     EMBL
                                                                                                                                a collaboration
                                                                                                                                                                               FAMILY
                                                                                  for
                                                                                                                                                                                                                                                                                                    extensive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                     outstation
                                                                                                                                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                    commercia.
                                                                                                         9n
                                                                                               no
                                                                                               way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                        RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                    ANTF_SARPE
Q08617;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
CARBOHYD
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entre the European Bioinformatics Institute. There are no resta
                                                                                                                                                   "Purification, cm
                                                                                                                                                                                                                                                                            01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence up
30-MAY-2000 (Rel. 39, Last annotation
ANTIFUNGAL PROTEIN PRECURSOR (AFP)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00065; neur_chan; 1.
PRINTS; PR00252; NRIONCHANNEL.
PRINTS; PR00253; GABAARECEPTR.
PRINTS; PR01160; GABAARESTA.
PROSITE; PS00236; NEUROTR_ION_CHANNEL; 1
        modified and
                    use
                                                                                                                                                                                                                                      Pterygota;
Oestroidea;
                                                                                                                                                                                                                                                         Sarcophaga
Eukaryota;
                                                                     -!- TISSUE SPECIFICITY: HEMOLYMPH.
                                                                                                                                  J. Biol. Chem.
                                                                                                                                                                                    MEDLINE=93280179; PubMed=8505329;
                                                                                                                                                                                                        SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transmembrane.
                                                                                                                                                                                                                            NCBI_TaxID=7386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Postsynaptic membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                            larvae.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                 426 ЕНСНСНСНН 434
                                                                                                                                                                                                                                                                                                                                                                                                    1 KHGHGHGKH
                                                                              SUBUNIT: HOMODIMER.
TISSUE SPECIFICITY:
                                                                                                             FUNCTION: THIS PROTEIN INHIBITS THE GROW FUNGAL SPECIES. THE ANTIFUNGAL ACTIVITY
                                                                                                     ENHANCED BY THE PRESENCE
                    bу
                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 7; Conser
non-profit institutions as long
and this statement is not removed
requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002289; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IPR000188;
                                                                                                                                                                                                                                 peregrina (Plesh fly) (Boettcherisca peregrina (Plesh fly) (Boettcherisca peregrina Hexapoda; Metazoa; Arthropoda; Tracheata; Hexapoda; Neoptera; Endopterygota; Diptera; Brachyce; Sarcophagidae; Sarcophaga.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IPR001175;
                                                                                                                                                                          Kurata S., Natori S.;
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                     characterization, and cDN
he hemolymph of Sarcophaga
                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ÃĄ;
                                                                                                                                  268:12055-12061(1993).
                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   248
253
199
535
97
101
65748 N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                268
291
316
356
568
590
                                                                                                                                                                                                         AND SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                   51.0%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ionic channel; Glycoprotein; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ¥.
is not removed. Usage by and fo agreement (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    V -> L (IN
                                                                                                      OF SARCOTOXIN IA
                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. .
N-LINKED (GLCNAC. .
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLY-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAMMA-AMINOBUTYRIC-ACID RECEPTOR BETA
                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81B9DB08E1906EF1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                         OF.
                                                                                                                                                                                                                                                                  (Boettcherisca peregrina)
                                                                                                                                                                                                                                                                                                                                                                                                                                   No.;
                                                                                                                                                                                                        20-54
                                                                                                                         THE GROWTH
                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                     cDNA cloning of an antifungal haga peregrina (flesh fly)
                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                               85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
2.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REF.
                                                                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                    as its content
                                                                                                              OF,
                                                                                                                                                                                                                                                Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                         1,
                                                                                                              OF A
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 606
                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                              PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL).
                                                                                                                                                                                                                                                          Insecta;
                             restrictions
         for
                                                                                                              OF
                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                        collaboration -
         commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                    n 0
                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
RESULT 6
HKN1_MAIZE
   Q
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                            01-MAR-1992
01-MAR-1992
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
DISULFID
                                                                                                                                                                              SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE-91172321; PubMed=1672445;
Vollbrecht E., Veit B., Sinha N.,
Vollbrecht E., Veit B., Sinha N.,
Vollbrecht E., Veit B., Sinha N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
DOMAIN
 <del>-</del> <del>-</del> <del>-</del> <del>-</del>
                                                                             Smith L.G., Green B., Veit B., Hake S.;
"A dominant mutation in the maize homeobox gene, Knotted-1, ectopic expression in leaf cells with altered fates.";
Development 116:21-30(1992).
                                                                                                                                                        Nature
[2]
                                                                                                                                                                                                                                               Zea mays (Maize).
Eukaryota; Viridiplantae; E
Magnoliophyta; Liliopsida;
Andropogoneae; Zea.
                                                                                                                                                                           gene
                                                                                                                      MEDLINE=93130770; PubMed=1362381;
                                                                                                                                                                                                                                                                                                                                                   HKN1_MAIZE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                      NCBI_TaxID=4577;
                                                                                                                                                                                                                                                                                                   HOMEOTIC PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                             DEVELOPMENTAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                      495
                                                                                                                                                                                                                                                                                                                                                                                                                          N
        FUNCTION: POSSIBLE TRANSCRIPTION FACTOR THAT REGULATES GENES INVOLVED IN DEVELOPMENT. MUTATIONS IN KN-1 ALTER LEAF DEVELOPMENT. FOCAL OF CELLS ALONG THE LATERAL VEIN DO NOT DIFFERENTIATE PROPERLY BUT CONTINUE TO DIVIDE, FORMING KNOTS. MAY PARTICIPATE IN THE SWITCH FROM INDETERMINATE TO DETERMINATE CELL FATES. PROBABLY BINDS TO THE DNA SEQUENCE 5'-TGAC-3'.

SUBCELLULAR LOCATION: NUCLEAR.
                                                                                                                                                                           developmental gene
family.";
                                                                                                                                                                                                                                                                                                                                                                                                     HGHGHGRDKHTNKDKNN 511
                                                                                                                                                                                                                                                                                                                                                                                                                        HGHGHG - - KHKNKGKKN 16
                                                                                                                                                               350:241-243(1991).
                                                                                                                                  в73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              434
61
639
                                                                                                                                                                                                                                                                                                            (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119
259
439
28
83
1107
1142
2209
2204
3328
83
3511
82
2169
229
402
                                                                                                                                            EXPRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĀΑ;
                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                 . 21, Last sequence up. 38, Last annotation KNOTTED-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70933
                                                                                                                                                                                                                                                                                                                                                                                                                                                        65
70
                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 68
EXPRESSED
                                                                                                                                                                                                                                                                  Embryophyta; Tracheophyta; Spermatophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ¥.
                                                                                                                                                                                                                                                          Poales;
                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BY SIMILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYSTATIN-LIKE
CYSTATIN-LIKE
CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC...) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MISSING (IN ISOFORM LMW).
E -> K (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CEYKGRLLKAGAGPAPERQAEASTVTP (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HIS-RICH.
INTERCHAIN (BY
                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -> K (IN REF. 2).
D3172DF94FF56AF5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY.
SIMILARITY.
SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                  Hake
is a
IN APICAL MERISTEMS OF VEGETATIVE
                                                                                                                                                                                                                                                         Poaceae; PACC clade; Panicoideae;
                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                   359
                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                   member of a maize homeobox
                                                                                                                                                                                              s
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
0.027;
                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 639
                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                  causes
                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                  its
                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
```

```
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                _DICDI
                                                                                                                                                                                                                                                                                                                                01-APR-1990
01-APR-1990
01-OCT-1994
                                                                                                                                                                                                                                                                                                                                                                      2C_DICDI
P15648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA_BIND
SEQUENCE
         This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for com
                                                                                                                                                                                 Ramji D.P., Richards A.J., Jagge
"Two cyclic AMP-regulated genes
                                                                                                                                                                                                                          STRAIN-AX2;
                                                                                                                                                                                                                                                                              Eukaryota; Mycetozoa;
                                                                                                                                                                                                                                                                                        Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00027; HOMEOBOX_1; 1. PROSITE; PS50071; HOMEOBOX_2; 1.
                                                                                                                                                                     homologous proteins."
                                                                                                                                                                                                         MEDLINE=90205618;
                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                NCBI_TaxID=44689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSFAC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               +
                                                                                                                                                                                                                                                                                                                  2C PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MaizeDB; 65584;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; X61308; CAA43605.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    between
                                                                                                                                                                                                                                                                                                                                                                                                                                                  15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                . MICROBIOI. 4:129-135(1990).
DEVELOPMENTAL STAGE: EXPRESSED ONLY LATE IN DEVELOPMENT.
EXPRESSION CEASES UPON CELL DISAGGREGATION BUT IS FULLY
BY EXOGENOUS CAMP.
BY EXOGENOUS CAMP. EXTENDED COIL STRUCTURE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 HGHGHGKH
                                                                                           SIMILARITY: TO PROTEIN 7E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MERISTEM DURING DEVELOPMENT. DOWN-REGULATED AS LEAVES AND FLORAL ORGANS ARE INITIATED.
SIMILARITY: BELONGS TO THE TALE/KNOX FAMILY OF HOMEOBOX PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND FLORAL STEMS AS WELL AS IN THE UNDERLYING GROUND MERISTEM.
SPECIFICALLY EXPRESSED IN VASCULAR BUNDLES DEVELOPING BOTH IN TH
LEAF AND STEM. VERY LOW LEVELS OF EXPRESSION IN LEAVES.
DEVELOPMENTAL STAGE: EXPRESSED THROUGHOUT APICAL AND VEGETATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S14283; S14283.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL European Bioinformatics Institute. There are no restrict
                                                                                                                                                                                                                                                                                                                                                                                                                                                 нснснсон
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T02062; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR001356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                264
359
                                                                                                                                                                                                                                                                                                                                (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22
92
264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homeobox;
                                                                                                                                                                                                                                                                            discoideum (Slime mold).
cetozoa; Dictyosteliida; Dictyostelium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30
95
270
263
326
326
39827
 a license agreement (See http://www
                                                                                                                                                                                                                                                                                                                               14,
14,
30,
                                                                                                                                                                                                            PubMed=2157129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52.0%;
87.5%;
                                                                                                                                                                                                                                                                                                                           Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transcription regulation; Nuclear protein. POLY-HIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ¥
                                                                                                                                                                                                Jagger P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. 1.2;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POLY-SER.
POLY-LYS.
ELK DOMAIN.
HOMEOBOX (TALE-TYPE).
W; 800FFD82082400FB CRC
                                                                                                                                                                                     from
                                                                                                                                                                                 , Bleasby A., F
Dictyostelium
                                                                                                                                                                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                                                    98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 359;
                                                                                                                                                                                                Hames
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                     discoideum
isb-sib.ch/announce/
                                                                                                                                 FULLY RESTORED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    restrictions on
                                                                                                                                                                                                В
                                                   gh a collaboration -
                                                                                                                                                                                                 b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collaboration
Loutstation -
                                                                                                                                                                                     encode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE
                         ö
                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RRITAR RANGE
                                                                                                                                                                                                                                                               KNG
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                RAT
                                                                                                                                                                                                                                                                                                                                                                                                VARSPLIC
SEQUENCE
                                                                                                                                                                                                                                         KNG_RAT
P08934;
                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                           gene
J. B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
"Primary Structures of the mRNAs encoding the rat precursors is bradykinin and T-kinin. Structural relationship of kininogens major acute phase protein and alpha 1-cysteine proteinase
                                                                                                                                                         Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                           01-NOV-1988 (Rel. 09, Created)
01-NOV-1988 (Rel. 09, Last sequence up
01-OCT-2000 (Rel. 40, Last annotation
                                                                                                                SEQUENCE FROM N.A. (ISOFORMS HMW MEDLINE=87137443; PubMed=3029068;
                                                                                                                                                                                         KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Glycoprotein; Plasma; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN; 1.
                                MEDLINE=86008264; PubMed=2413018; Furuto-Kato S., Matsumoto A., Kitamura N.,
                                                      SEQUENCE
                                                                                             "Differing expression
                                                                                                     Kitagawa H., Kitamura
                                                                                                                                                NCBI_TaxID=10116;
                                                                                                                                                                                                  KININOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bradykinin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                        519
                                                                          Biol.
                                                                                                                                                                                                                                                                                                                    2 HGHGHGKHKNKGKKN
                                                                                                                                                                                                                                                                         տ
                                                                         family.";
iol. Chem.
                                                                                                                                                                                                                                                                                                       HGHGHGKHTNKDKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF00031;
                                                                                                                                                                                                                                           P08933;
                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                     FROM N
                                                                                                                                                                                                00 (Rel. 40, Last annotation update) PRECURSOR [CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002395;
IPR003243;
                                                                                                                                                                                                                                                                                                                                                                                              433
661
                                                                                                                                                                                                                                                                                                                                              71.4%;
nilarity 73.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                         splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                   Æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cystatin;
                                                                         262:2190-2198(1987).
                                                                                                                                                                                                                                                     STANDARD;
                                                     Þ
                                                                                                                                                                                                                                                                                                                                                                                                                                         661
73102
                                                       (LIME
                                                                                                                                                                                                                                                                                                                           16
                                                                                                        Z
,
                                                                                              patterns and
                                                                                                        Hayashida н.,
                                                                                                                                                                                                                                                                                                                                                                                                   MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          INTERCHAIN (BY SIMILARITY).
BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                              Score 70; DB
Pred. No. 0.00
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
N-LINKED (GLCNAC...) (POTENTIAL).
VSPPYIAAEQEEROAETEQGPTHGHGWLHEKO ->
CEYKGRLSKAGAEPAPERQAESSQVKQ (IN ISO)
                                                                                                                                                                                                                                                                                                                                                                                              MISSING (IN ISOFORM
774460258D58796E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYSTATIN-LIKE HIS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYSTATIN-LIKE CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                       EWE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KININOGEN LIGHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KININOGEN HEAVY
                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Thiol protease inhibitor; Vasodilator; Inflammatory response; Signal;
                                                                                                                                                                                                                                                     PRT;
                                                                                                                            AND
                                                                                              a H., Miyata T., evolution of th
                                                                                                                                                                                                                      update)
                                                                                                                            EMW)
                                                                                                                                                                                                                                                    639
                                                                                                                                                                                                                                                                                                                                                                                                            (IN ISOFORM LMW).
                                                                                                                                                                                                                                                                                                                                                        DB 1;
0.0037;
                                                                                                                                                                                                                                                     Ā
                                 Nakanishi S.;
                                                                                              of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                                                                                                                                                                                                                                                                  Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                                                                              Nakanishi S.;
e rat kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                              0,
             with
                                                                                                                                                           Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                         RLLRA
                                                                                                                                                                                                                                                                                                                                              0;
```

```
RA Kageyama R., Kitamura N., Onkubo H., Nakanishi S.;

RY "Differing utilization of homologous transcription initiation sites

RY "Differing utilization of homologous transcription initiation.";

RY Of rat K and T kininogen genes under inflammation condition.";

RY OF TAT K and T kininogen genes under inflammation condition.";

RY J Biol. Chem. 262:3345-2351(1987).

CC -!- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROFEASES; (2)

CC -!- FUNCTION: (1) KININOGEN SARE INHIBITORS OF THIOL PROFEASES; (2)

CC -!- FUNCTION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO

CC HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO

CC FACTOR XII; (3) HAW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-

CC INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE

CC INDUCED AGGREGATION OF FIRELASED FROM HAW-KININOGEN SHOWS A VARIETY OF

CC INDUCED AGGREGATION OF HYPOTENSION, (4C) NATRIURESIS AND

CC CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND

CC CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND

CC CONTRACTION, (4C) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A

MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR

CC PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF

CC OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS

CC OTHER MEDIATORS OF INFLAMMATION OF NOCICEPTORS (4E3) RELEASE

CC OTHER MEDIATORS OF INFLAMMATION OF THROMBOCYTES; (6) LAW-

CC INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION);

CC KININOGEN IS IN CONTRAST TO HAW-KININOGEN NOT INVOLVED IN BLOOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J. Biol. [3]
                                                                                                                                                                                                                                                                                                                                                                                                                 entities
or send a
                                        CHAIN
CHAIN
                                                                                               PROSITE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Repeat; Thiol protease inhibitor; Vasodilator; Glycoprotein; Blood coagulation; Inflammatory response; Signal; Alternative splicing; Multigene family.
                                                                                                                                                                                                                                                                                           EMBL; L29428; AAA41486.1; -.
EMBL; M11884; AAA41487.1; -.
EMBL; M14369; AAA41484.1; -.
EMBL; M14369; AAA41485.1; ALT_SEQ.
EMBL; M16455; AAA41482.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fung W.-P., Schreiber G.; "Structure and expression of the genes for major acute phase alpha "structure in thiostatin) and kiningen in the rat.";
                                                                                                                                                          Pfam; PF00031; cystatin; 3: PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                 PIR; A25486; A25486.
PIR; A28055; A28055.
InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <del>-</del> - <del>-</del> -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein (thios
J. Biol. Chem.
                    PEPTIDE
                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=87137465; PubMed=3818598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-41 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-BUFFALO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=87250580; PubMed=2439509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 1-65 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibitor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          s SWISS-PROT entry is copyright. It is produced ween the Swiss Institute of Bioinformatics and European Bioinformatics Institute. There are a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW (SHOWN HERE) AND LMW; ARE PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
TISSUE SPECIFICITY: PLASMA.
TISSUE SPECIFICITY: PLASMA.
THE PRM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
MISCELLANGOUS: RAT EXPRESS FOUR TYPES OF KININOGENS: THE CLASSIC MISCELLANGOUS: AND TWO ADDITIONAL LMW-LIKE KININOGENS: T-I A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLOTTING
                                                                                                                                                                                                                                                                                                                                                                                                               s requires a license agreement (S an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tatin) and kininogen in 262:9298-9308(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             260:12054-12059(1985)
  18
639
380
389
639
KININOGEN.
KININOGEN HEAVY CHAIN
BRADYKININ.
KININOGEN LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                   (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                        usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   through
                                                                                                                                                                                                                                                                                                                                                                                                                                                        υγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OGENS: THE CLASSICAL KININOGENS: T-I AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ror
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in
                                                                                                                                                                                                                                                                                                                                                                                                                                                          commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            way
```

```
DISULFID
DISULFID
DISULFID
                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                      DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kato H.,
"Studies
                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; A01281; KGBOH1.
PIR; A29559; A29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                           CARBOHYD
                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                  PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                        SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00031; cystatin; 3. PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; V01491; CAA24735.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Studies on the primary structure of bovine high-molecular-we kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
                                                                                                                                                                                                              MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000010; -
InterPro; IPR002395; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  J. Biochem. 77:55-68(1975)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 458-498 MEDLINE=75170265; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bonds and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HMW I AND LMW I KININOGEN PRECURSORS ARE PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FUNCTION: (1) KININOGÉNS ARE INHIBITORS OF THIOL PROTEASES; (2) HWW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKRBIN AND PACTOR XI NEXT TO FACTOR XII; (3) HWW-KININOGEN INHIBITS THE THROMBIN- AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LINE=75170265; PubMed=1169237;
Y.N., Komiya M., Iwanaga S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLASMIN INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PROTICE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABLITY, (4E2) STILMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TO RESIDUE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nagasawa S., Suzuki T.;
on the structure of bov
of methionyl bonds in
389
389
19
136
258
19
87
136
168
197
204
204
204
204
106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                            response;
                                                                                                                                                                                                                                                                                                                                                                                                                         Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2.
                                                                                                                                                                                                         CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bovine kininogen: cleavages of disulfide in kininogen-II.";
                                                                                      N-LINKED (GLCNAC.
                                                                                                                                                            PARTIAL.
                                                                                                                                                                                     N-LINKED
                                                                                                                                                                                                                                                                                 LIGHT CHAIN.
CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                      HEAVY CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                  KININOGEN,
                                                                                                                                                                                     (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are no restrictions ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                               WH.
                                                                                                                                                                                                                                    ω 2 H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     high-molecular-weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Usage
                                                                                                                                                                                                              ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SORTET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNG_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMITTED (APR-1996) to the EMBL/GenBank/DDBJ databases.

C: -i- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

C: -i- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

C: -i- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

C: -i- FUNCTION: (3) HAW-KININOGEN INHIBITORS THE THROMBIN-AND PLASMIN-

C: -i- FUNCTION: (3) HAW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-

C: -i- FUNCTION: (3) HAW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-

C: -i- FUNCTION: (4) HAT IS RELEASED FROM HAW-KININOGEN SHOWS A VARIETY OF EARADYKININ THAT IS RELEASED FROM HAW-KININOGEN SHOWS A VARIETY OF EARADYKININ THAT IS RELEASED FROM HAW-KININOGEN SHOWS A VARIETY OF EARACTION, (46) INDUCTION OF HYPOTENSION, (46) NATHURESIS AND DIRECTS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION ADD CAUSES (4E) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KNG_MOUSE
008677; 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID DISULFID DISULFID DISULFID DISULFID
               EMBL; D84435; BAA19743.1;
EMBL; D84415; BAA19742.1;
MGD; MGI:1097705; Kng.
                                                                                                                         the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified are the statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=C57BL/6 x CBA; TISSUE=Liver; Takano M., Kondoh J., Yayama K., Ok
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                               entities requires a
                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss_Institute_of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Takano M., Kondoh J., Yayama K., Okamoto H.; "Molecular cloning of cDNAs for mouse low- a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KININOGEN PRECURSOR [CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-2000 (Rel.
01-OCT-2000 (Rel.
01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ب
                                                                                                                                                                                                                                                                                                   INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION); (5)
LAW-KININGEN INHIBITS THE AGGRECATION OF THEMBECYTES; (6) LAW-
KININGEN IS IN CONTRAST TO HAW-KININGEN NOT INVOLVED IN BLOOD
CLOTTING (BY SIMILARITY).
SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW (SHOWN HERE) AND LAW; ARE
PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                             SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS
                                                                                                                                                                                                                                                               TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KHGHGKKKKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KHGHGKGKKKKKKKK 491
                                                                                           an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         008676;
                                                                                           equires a license agreement (See http://www.isb-sib.ch/announce/
email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              205
228
263
327
350
621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      217
247
266
339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 93;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HMW AND LMW).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D16850BEFE3C55CD CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
1.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and high- molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                 BY PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                           EMBL
                                                                                                                                                                                                           a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                         outstation
                                                                                                                                 in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HAW-KININGEN LAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREALLIKEREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HAW-KININGEN INHIBITS THE THROMBIN- AND PLASMIN-INDUCED AGGREGATION OF THROMBON THE ACTIVE PREPTIDE BRADYKININ THAT IS RELEASED FROM HAW-KININGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDLOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACCTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Han Y.N., Komiya M., Iwanaga S., Suzuki T.; in Studies on the primary structure of bovine he kininogen. Amino acid sequence of a fragment peptide') released by plasma kallikrein."; J. Biochem. 77:55-68(1975).
                                Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSTTE: PS000287; CYSTATUS; 2.
Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing;
                                                                                                                                                              InterPro;
InterPro;
                                                                                                                                                                                                                                                   EMBL; V01492; CAA2473
PIR; A01282; KGBOH2.
PIR; B29559; B29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Biochem. 79:1201-1222(1976). [5]
[5]
SEQUENCE OF 456-496.
MEDLINE-75170265; PubMed-1169237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Miyata T., Iwanaga S.;
"Bovine high molecular weight kininogen. The amino acid sequence,
positions of carbohydrate chains and disulfide bridges in the hea
                                                                                                                                                                                                                                                                                                                                                          EMBL; V01492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 387-455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 376-391 MEDLINE=70180420; Pu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            following
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Han Y.N., Kato H., Iwanaga S., Suzuki T.;
Primary structure of bovine plasma high-molecular-weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-76260155; PubMed-956151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bonds and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'Studies on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EN European Bioinformatics Institute. There are no resti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININGEN BY
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amino acid sequence of a glycopeptide portion (fragment 1) lowing the C-terminus ot the bradykinin moiety."; Biochem. 79:1201-1222(1976).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW II ALMW II KININOGEN PRECURSORS PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TO RESIDUE 398
                                                                                                                                                                                                                                                                                                                     V01492; CAA24736.1; -.
V01492; CAA24737.1; ALT_SEQ.
   protease inhibitor;
                                                                                                                                                                                                                                P04129; 1AFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      portion."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nagasawa S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nagasawa S., Suzuki T.;
on the structure of bovine kininogen: cleavages of disulfide of methionyl bonds in kininogen-II.";
m. 67:313-323(1970).
                                                                                                                                                          IPR000010; -. IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262:2768-2779(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=4986212;
      Bradykinin; Blood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bovine high-molecular-weight fragment ('histidine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               There are no restrictions
      coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLASMA
Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collaboration
- cotstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qn
```

```
RESULT
KNH1_BC
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                        P01044;
21-JUL-1986 (Rel. C
21-JUL-1986 (Rel. C
01-JUN-1994 (Rel. C
                                                                                                                                                                                                                                                                                                                                                     DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                      _BOVIN
KNH1_BOVIN
                                                                                                                                                                                                                                                                                                                                VARIANT
VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                  DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOD_RES
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                      Bovidae; Bovinae; Bos.
NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIGNAL
SEQUENCE OF 378-393
MEDLINE=70180420; Po
                                   "Bovine high molecular weight kininogen. The amino acid positions of carbohydrate chains and disulfide bridges i
                                                 Sueyoshi T., Miyata
Miyata T., Iwanaga S
                                                                                                                 SEQUENCE FROM N.A. MEDLINE=84014106; PubMed=6571699;
                                                                                                                                                             Eukaryota;
                                                                                                                                                                            BRADYKININ].
                                                                                                                                                                                    KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
                                                                       SEQUENCE OF 19-378
                                                                                     Nature 305:545-549(1983).
                                                                                             weight
                                                                                                   Kitamura N., Takagaki Y., Furuto S., Tanaka T.,
"A single gene for bovine high molecular weight
                                                                                                                                                       Mammalia; Eutheria;
                                                                                                                                                                      Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                               MEDLINE=87137530;
                                                                                                                                                                                                                                                           474
                                                                                                                                                                                                                                                                   1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                           KHGHGHGKHKNKGKNN 489
                            portion.
                      Chem.
                                                                                                                                                                                    HMW
                                                                                                                                                             Metazoa;
                                                                                                                                                                      (Bovine)
                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                        262:2768-2779(1987)
                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                   . 01, Last sequence up. 29, Last annotation PRECURSOR (THIOL PRO)
                                                                                                                                                                                           01,
01,
29,
                                                                PubMed=3546295;
 PubMed=4986212
                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
619
376
386
619
135
256
                                                      Τ.,
                                                                                                                                                      Chordata; Craniata; Vertebrata; Cetartiodactyla; Ruminantia; Pe
                                                                                                                                                                                                                                                                                                                         68710
                                                                                                                                                                                                                                                                                             94.9%;
93.8%;
                                                                                                                                                                                                         Created)
                                                         Hashimoto
                                                                                                                                                                                                                                                                                                                         ₩;
                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                 ΞΓ
                                                                                                                                                                                                                                                                                                                                                                                                                            N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    OR 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PYRROLIDONE CARBOXYLIC N-LINKED (GLCNAC. . .).
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BRADYKININ
                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KININOGEN,
                                                                                                                                                                                                                                                                                                                                v v v
                                                                                                                                                                                                                                                                                                                         F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                                      Mismatches
                                                        z
;
                                                                                                                                                                                   proteinase inhibitor) (CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                             93;
No.
                                                                                                                                                                                                 update)
                                   disulfide bridges in
                                                                                                                                                                                                                        621
                                                         Kato н., наyashida
                                                                                                                                                                                                                                                                                             DB 1;
1.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MMH
                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          II.
                                                                                                                                                                                                                                                                                                                                                                                                                              : :::
                                                                                                                                                                                                                                                                                                   Length 619;
                                                                                                   Nawa H., and low m
                                                                                                                                                                                                                                                                                                                                                                                                                                    .) (PARTIAL).
                                                                                                                                                       Pecora; Bovoidea
                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACID
                                                                                                    molecular
                                                                                                           Nakanishi
                                   the heavy
                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                      Gaps
                                                                                                            ŝ
                                                                                                                                                                                                                                                                                      0
```

```
PIR; A01279; KGHUH1.

PIR; A25276; A25276.

PIR; A01280; KGHUL1.

PIR; B25276; B25276.

PIR; S02482; S02482.

SWISS-2DPAGE; P01043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; K02566; EMBL; M11438; M11438; M11521; EMBL; M11522; EMBL; M11523; EMBL; M11526; EMBL; M11526; EMBL; M11528; EMBL; M11528; EMBL; M11528; EMBL; M11521; EMBL; M11522; EMBL; M11522; EMBL; M11523; EMBL; M11524; EMBL; M11525; EMBL; M11525; EMBL; M11525; EMBL; M11525; EMBL; M11527; EMBL; M11527; EMBL; M11528; EMBL; EMBL; M11528; EMBL; M1
                              CHAIN
CHAIN
                                                                                                                                                                                                                                  PRINTS; PRO0334; KININOGEN.
PROSITE; PRO03287; CYSTATIN:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -i- FÜNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
HWW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGGLATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO
FACTOR XII; (3) HWW-KININGEN INHIBITS THE THROMBIN-AND PLASMIN-
INDUCED AGGREGATION OP THROMBOCYTES; (4) THE ACTIVE PEPTIDE
BRADYKININ THAT IS RELEASED FROM HWW-KININGGEN SHOWS A VARIETY OF
PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
MEDIATOR OF INFLAMMATION AND CAUSES (4E) INCREASE IN VASCULAR
PERMEABILITY, (4E2) STIMULATION OF NCCICEPTORS (4E3) RELEASE OF
OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
A CARDIOPROFECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION,
INDIRECTLY VIA ENDOTHELIUM-DETRIVED RELEASE (5)
LMW-KININGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMW-
KININGEN IS IN CONTRAST TO HMW-KININGEN NOT INVOLVED IN BLOOD
                                                                                                       SIGNAL
                                                                                                                                                                                                                      Glycoprotein;
                                                                                                                                          Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seikagaku
                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW (SHOWN HERE) AND LMW; ARE PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KININOGEN IS
CLOTTING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       56:808-808(1984)
                                                                                                                                                                        Blood coagulation;
                                                                                                                                      splicing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB59550.1;
AAB59550.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAA35497 1;
AAB59550 1;
                                                                                                                                                                                                               287; CYSTATIN; 2.
Plasma; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P01043; HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB59551
18
644
380
389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                          KININOGEN HEAVY CHAIN
                                                                                                                                                                        Thiol protease inhibitor; Vasodilator; Inflammatory response; Signal;
```

```
RESULT
KNH2_B
                                                                                                                                                                                        밁
                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                         P01045;
21-JUL-1986 (Rel. (
21-JUL-1986 (Rel. (
01-OCT-2000 (Rel. (
                                                                                                                                                            LT 2
_BOVIN
                                                                                                                                                                                                                                                                                                                                                               DISULFID
CARBOHYD
CARBOHYD
                                                                        Bos taurus (Bovine).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea

Bovidae; Bovinae; Bos.

NCBI_TaxID=9913;
                                                                                                                                                                                                                                                   VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                               CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
DISULFID
SEQUENCE OF 19-376.
MEDLINE-87137530; PubMed=3546295;
Sueyoshi T., Miyata T., Hashimoto
                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                           "A single gene for bovine weight kininogens.";
Nature 305:545-549(1983).
                                                Kitamura N.,
                                                    SEQUENCE FROM N.A. MEDLINE-84014106; Pubmed-6571699;
                                                                                                             BRADYKININ
                                                                                                                     KININOGEN,
                                                                                                                                                      KNH2_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                          MOD_RES
                                                                                                                                                                                                                                                                              VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                     REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                        498
                                                                                                                                                                                              1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                      BOVIN
                                                                                                                                                                                       KHGHGKGKKKNKGKKN
                                                                                                                                                                                                                  l Similarity
16; Conserv
                                                                                                                    MMH
                                                                                                                                                                                                                                                    644
                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                              420
450
480
19
                                                Takagaki Y.,
                                                                                                                    ij
                                                                                                                                                                                                                                                    AA;
                                                                                                                                                     STANDARD;
                                                                                                                          01, Created)
01, Last sequence update)
40, Last annotation updat
                                                                                                                   PRECURSOR
                                         bovine
                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                    71945
                                                                                                                                                                                       513
Hashimoto N.,
                                         Furuto S., Tanaka T.,
high molecular weight
                                                                                                                                                                                                                                                    ¥.
                                                                                                                    (THIOL
                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CYSTATIN-LIKE :
CYSTATIN-LIKE :
                                                                                                                                                                                                                                                 MISSING (IN ISOFORM LMW).
T -> I (IN REF. 1).
; 3132B4CBAF8FBB7E CRC64;
                                                                                                                                                                                                                                                                                                                                                 N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                        VSPPHTSMAPAQDEERDSGKEQGHTR
PPKAGAEPASEREVS (IN ISOFOR
                                                                                                                                                                                                                                                                                                                                                                                                                                 PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HIS-RICH (ASSOCIATED WITH CLOTTING ACTIVITY).
                                                                                                                                                     PRT;
                                                                                                                                                                                                                        Score 98; DB 1;
Pred. No. 2.8e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KININOGEN LIGHT
                                                                                                                                                                                                                  Mismatches
                                                                                                                   ion update)
PROTEINASE
                                                                                                                                                     619
                                                                                                                                                                                                                                                                                                                                                (GLCNAC.
(GLCNAC.
(GLCNAC.
Kato H.,
                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                   INHIBITOR) [CONTAINS
Hayashida
                                        Nawa H., Nakanishi S.; and low molecular
                                                                                                                                                                                                                              Length 644;
                                                                                                                                                                                                                                                                         ISOFORM LMW)
                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                        ACID
Η.,
                                                                                                                                                                                                                                                                              SHLRSCEYKGR
                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                 Gaps
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                                                                                                                                         Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                             Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                 46.5
45.5
45.5
                                                                                       44.5
                                                                                                                                                                   48.5
48
48
47.5
47.5
                                                                                                                                                                                                                                                                                                                                                                                                                            seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                     98
93
93
70
50
50
                                            Match Length DB
                                                                                                                                                                                                                                                                                                        Query
                                                                                                                                                                                                                                                                                                                                                                          SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-437-912-8
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              July 6, 2001, 09:26:40 ; Search time 37.59 Seconds (without alignments)
14.581 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KHGHGHGKHKNKGKKN 16
 306
480
503
507
97
352
1213
352
1213
670
286
1273
1273
1273
1273
1285
515
515
265
1085
515
267
8423
3678
                                                                                                                                                                                                                     909
                                                                                                                                                                                                                              644
619
621
661
639
359
RL8_AEDAL
SANT_PLAFF
DCDA_ECOLI
BIOA_CORGL
UDPE_NPVSL
LAC2_THACU
GARP_PLAFF
FSH_DROME
                                                                                              KE4_BRARE
T2D2_DROME
COT1_YEAST
VG50_HSVI1
CH36_DROME
YB76_YEAST
MYS3_YEAST
MYS3_YEAST
                                                                                                                                                                           ANTF_SARPE
CH38_DROME
YBCZ_ECOLI
ZNT1_MOUSE
ZNT1_RAT
                                                                                                                                                                                                                                            KNH2_BOVIN
KNH1_BOVIN
KNG_MOUSE
KNG_RAT
                                                                             KE4L_CAEEL
IFH1_YEAST
                                                                                                                                                                                                                                                                                               ij
                                                                                                                                                                                                                    GAB_DROME
                                                                      DHN1_PEA
                                                                                                                                                                                                                              HKN1_MAIZE
2C_DICDI
                                                                                                                                                                                                                                                                               KNG_HUMAN
                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                     93435
Q88168
Q02075
P13816
P13709
                                     P46395
                                                                                        Q9xtq7
                                                                                                                                                                                                                                                                            P01042 homo sapien
                                                                                                                                                                                                                                                                                              Description
7 plasmodium
1 escherichia
5 corynebacte
8 spodoptera
5 thanatephor
6 plasmodium
9 drosophila
                                                           sonchus yel
caenorhabdi
saccharomyc
pisum sativ
aedes albop
                                                                                                                                                 mus musculu
rattus norv
homo sapien
brachydanio
drosophila
                                                                                                                                                                                           sarcophaga
drosophila
escherichia
                                                                                                                                                                                                                    rattus norv
zea mays (m
dictyosteli
drosophila
                                                                                                                drosophila saccharomyc
                                                                                                                                 saccharomyc
ictalurid h
                                                                                                       saccharomyc
                                                                                                                                                                                                                                                    mus musculu
                                                                                                                                                                                                                                                             bos taurus
bos taurus
  ΡŢ
"Disulfide bonds in bovine HMW kininogens.";
```

36 42 42 159 1 HUNB_DROWN 37 42 42 9 159 1 HUNB_DROWN 38 42 42 9 159 1 HUNB_DROWN 38 42 42 9 253 1 HUNB_DROWN 40 42 42 9 253 1 HUNB_DROWN 41 42 42 9 253 1 HUNB_DROWN 41 42 42 9 415 1 DEDM_BUCKL 41 42 42 9 415 1 DEDM_BUCKL 42 42 9 415 1 DEDM_BUCKL 43 42 42 9 415 1 DEDM_BUCKL 44 42 42 9 693 1 DEDM_BUCKL 43 42 42 9 693 1 DEDM_BUCKL 44 42 42 9 693 1 DEDM_BUCKL 45 42 42 9 693 1 DEDM_BUCKL 46 42 42 9 693 1 DEDM_BUCKL 47 101-196 (Rel. 40, Last annotation update) 48 42 42 9 693 1 DEDM_FUCKL 48 101-196 (Rel. 40, Last annotation update) 49 101-UTL196 (Rel. 40, Last annotation update) 40 101-UTL196 (Rel. 40, Last annotation update) 40 101-UTL196 (Rel. 40, Last annotation update) 40 101-UTL196 (Rel. 40, Last annotation update) 41 101-UTL196 (Rel. 40, Last annotation update) 42 42 9 980 1 DEDM_FUCKL 45 42 42 9 980 1 DEDM_FUCKL 45 42 42 9 980 1 DEDM_FUCKL 46 42 42 9 980 1 DEDM_FUCKL 47 101-196 (Rel. 40, Last annotation update) 48 101-UTL196 (Rel. 40, Last annotation update) 49 101-UTL196 (Rel. 40, Last annotation update) 40 101-UTL196 (Rel. 40, Last annotation update) 40 101-UTL196 (Rel. 40, Last annotation update) 41 101-UTL196 (Rel. 40, Last annotation update) 42 42 9 980 1 DEDM_FUCKL 43 101-UTL196 (Rel. 40, Last annotation update) 44 42 42 9 980 1 DEDM_FUCKL 45 42 42 9 980 1 DEDM_FUCKL 46 42 42 9 980 1 DEDM_FUCKL 47 101-UTL196 (Rel. 40, Last annotation update) 46 42 42 9 980 1 DEDM_FUCKL 48 101-UTL196 (Rel. 40, Last annotation update) 47 101-UTL196 (Rel. 40, Last annotation update) 48 101-UTL196 (Rel. 40, Last annotation update) 48 11 11 11 11 11 11 11 11 11 11 11 11 11	
42 42.9 158 1 HUNN 42 42.9 159 1 HUNN 42 42.9 253 1 RL6 42 42.9 693 1 CAUTE 42 42.9	
158 1 HUNN 159 1 HUNN 159 1 HUNN 169 1 RIGE 253 1 RIGE 255 1 MYBS 415 1 DCD 449 1 CSUU 693 1 CAU 693 1 CAU 697 1 BOBN , Last seque , Takasawa a H., Fukush bMed=2989293 a H., Fukush a H., Fukush a H., Fukush a H., Fukush a CDNA for a	.4700
158 1 HUNN 159 1 HUNN 159 1 HUNN 169 1 RIGE 253 1 RIGE 255 1 MYBS 415 1 DCD 449 1 CSUU 693 1 CAU 693 1 CAU 697 1 BOBN , Last seque , Takasawa a H., Fukush bMed=2989293 a H., Fukush a H., Fukush a H., Fukush a H., Fukush a CDNA for a	42.5 42 42 42 42
158 1 HUNN 159 1 HUNN 159 1 HUNN 169 1 RIGE 253 1 RIGE 255 1 MYBS 415 1 DCD 449 1 CSUU 693 1 CAU 693 1 CAU 697 1 BOBN , Last seque , Takasawa a H., Fukush bMed=2989293 a H., Fukush a H., Fukush a H., Fukush a H., Fukush a CDNA for a	, ν ν ν ν ω
HUNB_DROMM HUNB_DROMM HUNB_DROWO GRP_HONGO GRP_HONGO GRP_HONGO GRP_BONGO GRP_BONGO RIG_TEAST MYBJ_MAIZE DCDA_BUCAI CSUP_DROME EXUP_DROME EXUP_DROME EXUP_DROME EXUP_DROME EXUP_DROME EXUP_DROME CAUP_DROME EXUP_DROME EXUP_DROME BOBI_YEAST ALIGNMENTS  ALIGNMENTS ALIGNMENTS ALIGNMENTS ALIGNMENTS ALIGNMENTS ALIGNMENTS ALIGNMENTS ALIGNMENTS ALIGNMENTS FUNDAME EXUP_DROME BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_TEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_YEAST BOBI_TEAST BOBI_TEA	
PROSO PROSO PROSO PROSO PROSO PROME PROME SUCAI BROME COME COME TEAST TE	
्रेस के के किस क्षा क्षा के किस का किस का	ETTH  CABIT  ROMM  PROSO  PROSO  PROSO
-mo 1 - CO 1248825488254882548825488254882548825488	200454 P50117 D46248 D46258 P17816
248 drosophila 258 drosophila 268 drosophila 268 drosophila 269 saccharomyc 269 drosophila 269 drosophila 269 drosophila 269 drosophila 260 drosophila 261 drosophila 262 drosophila 263 drosophila 264 drosophila 265 drosophila 266 drosophila 267 drosophila 268 drosophila 269 drosophila 269 drosophila 260 drosophila 261 drosophila 261 drosophila 261 drosophila 261 drosophila 262 drosophila 263 drosophila 264 drosophila 264 drosophila 265 drosophila 266 drosophila 267 drosophila 268 drosophila 268 drosophila 268 drosophila 268 drosophila 268 drosophila 269 drosophila 260 drosophila 260 drosophila 261 drosophila 261 drosophila 261 drosophila 261 drosophila 262 drosophila 263 drosophila 264 drosophila 264 drosophila 265 drosophila 266 drosophila 267 drosophila 268 drosophila 268 drosophila 268 drosophila 268 drosophila 268 drosophila 268 drosophila 269 drosophila 260 drosophila 260 drosophila 260 drosophila 260 drosophila 261 drosophila 261 drosophila 261 drosophila 262 drosophila 263 drosophila 263 drosophila 264 drosophila 264 drosophila 265 drosophila 266 drosophila 267 drosophila 268 d	tetrahymen oryctolagu drosophila drosophila hordeum vu

```
Db.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: CESP:Y18D10A.10
A;Introns: 991/3; 127/1; 193/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Experimental source: clone Y18D10A Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 51.08;
Best Local Similarity 63.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       othetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47 HGHGHGHHHGR 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             32 HGHGHGNGNGNGNGN 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eris B. W. Data Library, December 1998
Meted to the EMBL Data Library, December 1998
Mexence number 220226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 HGHGHGKHKNK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 HGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eferences: EMBL:AL034393; PIDN:CAA22313.1; CESP:Y18D10A.10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 - 241 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.: Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     到现面的ary; translated from GB/EMBL/DDBJ
外色的DNA
                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein Y18D10A.10 - Caenorhabditis elegans
eporhabditis elegans
                                                                                                                                                                                                                                                      : Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          whic acid receptor A, cyclodiene resistance-conferring - fruit fly (Drosopsophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                        606 <FFR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Therefore the modern of cyclodiene resistance in Drosophila:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>Iminary</u>; nucleic acid sequence not shown; not compared with conceptual tr
                                                                                                                                                                                                                                                                                                                                        ices: FlyBase:FBgn0004244
Macetylchöline receptor
Inotransmitter receptor; transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                   nces: GB:M69057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               нскн 9
amka, M.L.; Lipshitz, H.D.
2129-2141; 1997
                                        nila_melanogaster
9 #sequence_revision 20-Sep-1999 #text_change 17-Nov-2000
13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R.H.; Mortlock D.P.; Shaffer, C.D.; MacIntyre, R.J.; Roush, R.T. Sci. US N 88, 7209-7213, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #sequence_revision 10-Apr-1992 #text_change 21-Aug-1998
                                                                                   fruit fly (Drosophila melanogaster)
                                                                                                                                                                                                                                                  51.0%; Score 50; DB 77.8%; Pred. No. 10; tive 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                    Length 606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 241;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
δõ
Search completed: July Job time: 648 sec
                                                                                               망
                                                                                                                                                                                                                                                              A; Description: probably function as a transcription factor C; Keywords: nucleus; zinc finger
                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: mRNA
A; Residues: 1-1920 < YIP>
                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Accession: T13893
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: Control of germ-band retraction in Drosophila by the zinc-finger protein HIN A; Reference number: Z17807; MUID:97330681
                                                                                                                                                                                                                                                                                                       C; Function:
                                                                                                                                                                                                                                                                                                                      A;Cross-references: FlyBase:FBgn0003053
                                                                                                                                                                                                                                                                                                                                             A;Gene: hindsight
                                                                                                                                       Query Match
Best Local Similarity 8/...
7; Conservative
                                                                                                                                                                                                                                                                                                                                                                               Cross-references: EMBL:U86010; NID:g2769709; PID:g2769710; PIDN:AAB95640.1
                                                                                           1136 HGHGHGSH 1143
                                                                                                                  2 HGHGHGKH 9
                   6, 2001, 09:18:02
                                                                                                                                                                                        51.0%;
87.5%;
                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                        Score 50; DB Pred. No. 28;
                                                                                                                                                                                                         2;
                                                                                                                                                                   ۳.
                                                                                                                                                                                                         Length 1920
                                                                                                                                                                   Indels
                                                                                                                                                                   0;
                                                                                                                                                                 Gaps
                                                                                                                                                                   0
```

۲.

```
R;Meisel, L.; Lam, E. Plant Mol. Biol. 30, 1-14, 1996
Plant Mol. Biol. 30, 1-14, 1996
A;Title: The conserved ELK-homeodomain of KNOTTED-1 contains two regions that signal A;Reference number: S65139; MUID:96197395
A;Accession: S65139
A;Status: nucleoic acid sequence not shown; not compared with conceptual translation A;Molecule type: mRNA
A;Residues: 247-326 <MEI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Accession: T13594
C;Accession: T13594
R;Ferraz, C.; Vidal, S.; Brun, C.; Bucheton, A.; Demaille, J.G.
submitted to the EMBL Data Library, October 1998
A;Description: Sequencing the distal X chromosome of Drosophila melanogaster.
A:Reference number: Z17692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-125 <SCH>
A;Cross-references: EMBL:AL355927; GSPDB:GN00116; NCSP:BID1.100
A;Experimental source: BAC clone BID1; strain OR74A
C;Genetics:
A;Gene: NCSP:BID1.100
A;Map position: 6
                                                                                                                                                                                                                                                                                                                                       N;Alternate names: homeotic protein Knotted-1
C;Species: Zea mays (maize)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 15-Oct-1999
C;Accession: S14283; S65139
R;Vollbrecht, E.; Veit, B.; Sinha, N.; Hake, S.
Nature 350, 241-243, 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein peb - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
C;Date: 13-Aug-1999 #sequence_revision 13-Aug-1999 #text_change 13-Aug-1999
C;Accession: T13594
                                                                                                                                                                                                                                                                         A;Title: The developmental gene Knotted-1 is a member of a maize A;Reference number: S14283; MUID:91172321 A;Accession: S14283
                                                                                                                                                                                 A;Cross-references: GB:X61308; GB:X57672; NID:g22350; PIDN:CAA43605.1; PID:g22351
A;Note: DNA was also sequenced
                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-359 < VOL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-1891 <FER>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             transcription factor Knotted-1 - maize
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Introns:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: EMBL:AL031227; NID:e1330103; PID:e1316856; PIDN:CAA20227.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;Genetics:
;;Gene: NCSP:B1D1.100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;Gene: peb
;Cross-references: FlyBase:FBgn0003053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1133 HGHGHGSHGSHG 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 HGHGHGKHKNKG 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 HGHGHG-KHKNKGKK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HDHGRGRKHGNKGKK 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  289/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 66.
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          55.6%;
73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 54; DB Pred. No. 7.6; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 54.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
7.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DВ
.57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1891;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                 regions that signal
                                                                                                                                                                                                                                                                                                                     homeobox gene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                     nu
```

```
A; Description: involved in the regulation of vegatative development; may A; Note: primarily expressed in meristematic cells of vegetative tissues; A; Note: intercellular transport into epidermal cells has been proposed C; Superfamily: unassigned homeobox proteins; homeobox homology C; Keywords: DNA binding; homeobox; nucleus; transcription regulation F; 265-324/Domain: homeobox homology <HOX>
                                                                                                                                                                                                                                                                                             submitted to the EMBL Data Library, November 1996 A; Reference number: Z20428 A; Accession: T27840
                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein ZK39.2 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene 2C protein - slime mold (Dictyostelium discoideum)
C;Species: Dictyostelium discoideum
C;Date: 07-Sep-1990 #sequence_revision 07-Sep-1990 #text_change 29-Oct-1999
                                                                                                                                                                                         A;Cross-references: EMBL:282093; PIDN:CAB05018.1; GSPDB:GN00019; CESP:ZK39.2 A;Experimental source: clone ZK39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Two cyclic AMP-regulated genes from Dictyostelium discoideum encode homologo A;Reference number: S08136; MUID:90205618
A;Accession: S08137
                                                                                                          A; Map position: 1
A; Introns: 28/1; 55/3;
                                                                                                                                                  C; Genetics:
A; Gene: CESP: ZK39.2
                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-229 <WIL>
                                                                                                                                                                                                                                                                            A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                   C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Genetics:
A; Gene: 2C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-98 < RAM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Ramji, D.P.; Richards, A.J.; Jagger, P.; Bleasby, A.; Hames, B.D Mol. Microbiol. 4, 129-135, 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: Kn-1
A;Introns: 126/3; 167/3; 216/1; 293/3
                                                                                                                                                                                                                                                                                                                                                             R;Kershaw,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T27840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X16827; NID:g7161; PIDN:CAA34727.1; PID:g7162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Accession: S08137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S08137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics:
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15 HGHGHGQH 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78 HGNGHGPHGHGGK 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 HGHGHGKHKNKGK 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 нснснски 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                          111/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51.0%;
61.5%;
                     51.0%;
53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   52.0%;
87.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 51;
Pred. No.
                     Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4.6
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                           Length 229;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    switched off
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          play a role
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

Conservative

0

Mismatches

Indels

0;

Gaps

0;

밁 Ş

```
N;Contains: bradykinin
C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 15-Nov-1996
C;Accession: A52486
R;Kitagawa, H.; Kitamura, N.; Hayashida. H. Wirring J. Biol. Chem. 262, 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R;Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, J. Biol. Chem. 262, 2199-2198, 1987
A;Title: Differing expression patterns and evolution A;Reference number: A92625; MUID:87137443
A;Accession: A25486
A;Molecule type: mRNA
A;Residues: 1-639 <KIT>
A;Note: the authors translated the codon CAA for resic;Superfamily: kininogen; cystatin homology C;Keywords: alternative splicing
                                                                                                                                                                                                                                                                                                                                                                                                                       F;1-18/Domain: signal sequence #status predicted <SIG>
F;19-639/Product: kininogen, HMW I #status predicted <MAT>
F;19-131/Domain: cystatin homology <CY12>
F;142-253/Domain: cystatin homology <CY2>
F;264-375/Domain: cystatin homology <CY3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R:Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, T.; Nakanishi, S.
J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution of the rat kininogen gene family.
A;Reference number: A92625; MUID:87137443
A;Accession: C25486
A;Molecule type: DNA
A;Mol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K-kininogen, HMW precursor - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 30-Sep-1993
C;Accession: C5486
C;Accession: C5486
       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;399,400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) (covalent) \#status F;498-499/Cleavage site: Arg-Thr (kallikrein) \#status experimental
                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          476 KHGHGHGKHKNKGKNN 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N
                                                                                                                                                                               2 HGHGHG--KHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KHGHGHGKHKNKGKKN 16
           σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ഗ
                                                                                                            HGHGHGRDKHTNKDKNN 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGHGHGRDKHTNKDKNN 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGHGHG--KHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94.9%;
93.8%;
                                                                                                                                                                                                                                                                                        65.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    65.3%;
                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                        Score 64;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 93; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        core 64; DB red. No. 0.05
                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                        DB 2;
0.11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
0.051;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      residue
                                                                                                                                                                                                                                                   ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 621;
                                                                                                                                                                                                                                                                                                                      Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of the rat kininogen gene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Asn
                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                   1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               μ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ф
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         major acute phase alpha-1 protein 1 - rat (fragments)
C;Species: Rattus norvegicus (Norway rat)
C;Acte: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 16-Jul-1999
C;Accession: A27115
R;Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
J. Biol. Chem. 262, 9298-9308, 1987
A;Title: Structure and expression of the genes for major acute phase alpha-1-protein A;Accession: A27115
A;Accession: A27115
                                                                                                                                                                    C;Species: Neurospora crassa
C;Date: 02-Jun-2000 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: not compared with conceptual translation A;Molecule type: DNA A;Residues: 1-315 <FUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:J02662; NID:g205071; PIDN:AAA41483.1; PID:g205072 C;Superfamily: kininogen; cystatin homology F;19-65/Domain: cystatin homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
A;Title: Structure and expression of the genes
A;Reference number: A92653; MUID:87250580
A;Accession: C27115
A;Accession: C27115
A;Accession: C27115
A;Accession: C27115
A;Kaccession: C27115
A;Kacce
                                                           R;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann, submitted to the Protein Sequence Database, May 2000
                                                                                                                                          C; Accession: T49356
                                                                                                                                                                                                                                                                                        T49356
                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Superfamily: kininogen; cystatin homology F;19-65/Domain: cystatin homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: MAP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: Differing utilization of homologous transcription initiation sites of rat K A;Reference number: A25488; MUID:87137465
A;Accession: A25488
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-48 <KAG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K-kininogen, LMW precursor - rat (fragments)
c;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 20-Aug-1999
C;Accession: C27115; A25488
R;Fung, W.P.; Schreiber, G.
A; Accession: T49356
                                 A; Reference number:
                                                                                                                                                                                                                                               hypothetical protein B1D1.100 [imported] - Neurospora crassa
                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -65/Domain: cystatin homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                  197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173 HDHGEGKHTNKDKNN 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 HGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 HGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                  HDHGEGKHTNKDKNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                 225022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                               211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61.28;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 60;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                        02-Jun-2000 #text_change 02-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for major acute phase alpha-1-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 315;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                     B.; Holland, R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                     Nyakatu
```

Ş

밁

Ş

밁

```
A;Reference number: Ayyyyu
A;Reference number: Ayyyyu
A;Contents: annotation; disulfide bonds
A;Contents: annotation; disulfide bonds
A;Note: article in Japanese
C;Comment: The HMW kininogen precursor is produced from the same gene as the LMW form as C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of the C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine-rich region of HMW kininogen light chain is important in the glycine-rich region of HMW kininogen light chain is important in the glycine-rich region of HMW kininogen light chain is important in the glycine-rich region of HMW kininogen light chain is important in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain in the glycine-rich region of HMW kininogen light chain light ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Mólecule type: protein
A; Residues: 456-496 <AA2>
A; Residues: 456-496 <AA2>
R; Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato,
J. Biol. Chem. 262, 2768-2779, 1987
A; Title: Bovine high molecular weight kininogen.
A; Reference number: A92627; MUID:87137530
A; Accession: B29559
A; Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note:
R; Han, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030770
A;Contents: annotation: bovine cleavage sites; bovine carbohydrate binding sites R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Studies on the primary structure of bovine high-molecular-weight kininogen. A;Reference number: A91938; MUID:75170265 A;Accession: A91938 A;Accession: A91938 A;Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Biochem. 79, 1201-1222, 1
A; Title: Primary structure of A; Reference number: A91941; A; Accession: A91941
뫄
                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Title: Disulfide bonds in A; Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues: 'z', 20-104, 'E', 106-256, 'XX', 257-376 R; Lottspeich, F.; Kellermann, J.; Henschen, A.; Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seikagaku 56, 808,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                         136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental; 197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental; 197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental; 386-377/Cleavage site: Met-Lys (kallikrein) #status experimental; 386-387/Cleavage site: Arg-Ser (kallikrein) #status experimental; 396,400,404,510/Binding site: carbohydrate (Ser) (covalent) #status experimental; 397,398,518,522,534,546,551,568/Binding site: carbohydrate (Thr) (covalent) #status experimental; 397,398,518,522,534,546,551,568/Binding site: carbohydrate (Thr) (covalent) #status experimental; 496-497/Cleavage site: Arg-Thr (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Superfamily: kininogen; cystatin homology 
Keywords: alternative splicing; blood coagulation; cysteine; 1-18/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Molecule type:
Residues: 'Z', 2
                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47/Binding site: carbohydrate (Asn) (covalent) #status absent
87,168,169,204,280/Binding site: carbohydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            418-488/Region: glycine/histidine/lysine-rich
19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimer
27-589,82-93,106-125,141-144,205-217,228-247,261-264,325-337,348-367/Disulfide bonds:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-619/Product: HMW kininogen II #status predicted <MAT>
19-376/Product: HMW kininogen II heavy chain #status experimental <HCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Title: Primary structure of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41-252/Domain: cystatin homology <CY2>
461-372/Domain: cystatin homology <CY3>
461-372/Domain: cystatin homology <CY3>
461-372/Domain: cystatin homology <CY3>
471-386/Product: Lysyl-bradykinin (kallidin II) #status experimental <BDY>
478-386/Product: bradykinin (kallidin I) #status experimental <BDY>
478-386/Product: HMW kininogen II light chain #status experimental <LCH>
478-640/Product: HMW kininogen II light chain #status experimental <LCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Han, Y.N.; Komiya, M.; Iwanaga, Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9-130/Domain: cystatin homology <CY1>
    474
                                                                                                                                                                                                                                         Local
                                                                                       1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398-Pro, 401-Val,
                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                               94.9%;
93.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and 455-Lys
Iwanaga, S.;
    489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of bovine plasma high-molecular-weight kininogen.
MUID:76260155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bovine HMW kininogens
                                                                                                                                                                               Score 93; DB
Pred. No. 8.9e
0; Mismatches
                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         were also
Suzuki, T
                                                                                                                                                                                                                               DB 1;
8.9e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          II) #status experimental <KBDY>
tatus experimental <BDY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H.; Hayashida,
                                                                                                                                                                                                                                                                           Length 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino
                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       в.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  proteinase inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H.; Miyata, T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence,
                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (covalent) #status
                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 positions of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The amino
                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Iwanaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dup
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Α'n
```

RESULT

```
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 458-498 < HANN
R; Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato,
J. Biol. Chem. 262, 2768-2779, 1987
A; Title: Bovine high molecular weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N;Contains: bradykinin (xalllul,, ......)
N;Contains: bradykinin (xalllul,, ......)
C;Species: Bos prinigenius taurus (cattle)
C;Species: Bos prinigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999
C;Accession: A01281, A91923; A91938; A29559
C;Accession: A01281, A91923; A91938; A29559
D:Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C.Comment: The HMW kininogen precursor is produced from the same gene as th C.Comment: Kininogen is a cysteine proteinase inhibitor, takes part in init C.Comment: The glycine/histidine/lysine-rich region of HMW kininogen light C.Comment: Bradykinin, released from kininogen by kallikrein, is a potent v xyproline residue is present in the kininogen prior to the release of brady
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Reference number: A93317; MUID:84014106
A;Accession: A01281
A;MOlecular :
                                                                                                                                                                              F;417-488/Region: glycine/histidine/lysine-rich
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex:
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex:
F;27-591,82-93,106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide |
F;87,168,169,204/Binding site: carboydrate (Asn) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                         F:19-130/Domain: cystatin homology <CYI>
F:141-252/Domain: cystatin homology <CYI>
F:241-252/Domain: cystatin homology <CYI>
F:263-374/Domain: cystatin homology <CYI>
F:363-374/Domain: cystatin homology <CYI>
F:379-388/Product: lysyl-bradykinin (kallidin II) #status experimental <KBDY>
F:389-388/Product: bradykinin (kallidin I) #status experimental <BDY>
F:389-621/Product: HMW kininogen I light chain #status experimental <LCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Superfamily: kininogen; cystatin homology C;Keywords: alternative splicing; blood coagulation; c F;1-18/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein A; Residues: 378-393 <KAT> R; Han, Y.N.; Komiya, M.;
                                                                                       F;136/Binding site: carbohydrate (Thr) (covalent) (partial) #statu
F;197/Binding site: carbohydrate (Asn) (covalent) (partial) #statu
F;378-379/Cleavage site: Met-Lys (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S. Seikagaku 56, 808, 1984
A;Title: Disulfide bonds in bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Kato, H.;
J. Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;19-621/Product: HMW kininogen I #status predicted <MAT>
F;19-379/Product: HMW kininogen I heavy chain #status experimental <HCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein
A; Residues: 'Z', 20-123,'I', 125-127,'I', 129-378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Title: Studies on the structure of bovine kininogen: A; Reference number: A91923; MUID: 70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-621 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N; Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen <math>N; Contains: bradykinin (kallidin); kininogen <math>I; kininogen \ II; prokinin
                                                           F;382/Modified site: 4-hydroxyproline (Pro) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Note: article in Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Accession: A29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Studies on the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: A91923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references: GB: V01491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The HMW kininogen precursor is produced from the same gene as the LMW form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nagasawa, S.; Suzuki,
67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kellermann, J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the primary structure of A91938; MUID:75170265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GB:K01757; NID:g491;
                               (kallikrein)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           s.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Henschen, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bovine high-molecular-weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Η.,
                                                                                                                                (partial) #status
                                                                                                                                                                (partial) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIDN:CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            takes part in initiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В.;
#status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ħ.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        molecular weight kini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of.
experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           potent vasodilator of bradykinin.
                                                                                                                                experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Miyata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PID: 9492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  т.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bonds
                                                                                                                                                                                                                                                          experi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ı of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kini
```

```
A; Molecule type: protein
A; Residues: 1-19;189-192;310-314;381-389 <LEN1>
R; Rato, H.; Matsumura, Y; Maeda, H.
FEBS Lett. 232, 252-254, 1988
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation and identification of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation analogues of bradykinin in h.
A; Title: Isolation and Isolation analogues of bradykinin in h.
A; Title: Isolation analogues of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation analogues of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation analogues of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation analogues of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation analogues of hydroxyproline analogues of bradykinin in h.
A; Title: Isolation analogues of hydroxyproline analogues of hydroxyproline analogues of hydrox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein
A; Residues: 264-359, W', 361-375 <LEN2>
R; Little, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A; Title: Human mast cell tryptase isoforms:
A; Reference number: $55239; MUID:95251593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R; Lenarcic, B.; Krasovec, M.; Ritonja, A.; FBBS Lett. 280, 211-215, 191
A;Title: Inactivation of human cystatin C a
A; Reference number: S14303; MUID:91192133
A; Accession: S14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 379-389, 'K', 390-407,'Q', 409-644 <KEL2>
R; Mindroiu, T.; Carretero, O.A.; Proud, D.; Walz, D.; S.
Biochem. Biophys. Res. Commun. 152, 519-526, 1988
A; Title: A new kinin molety in human plasma kininogens.
A; Reference number: A27699; MUID:88209021
A; Accession: A27699
A; Molecule type: protein
A; Residues: 380-389 <MIN>
A; Mesidues: 380-389 <MIN>
B; Mascasulus & Materimity V · Kato. H
R;Kitamura, N.; Kitagawa, H.; Fukushima, D.; Takagaki, Y
J. Biol. Chem. 260, 86.10-8617, 1985
A;Title: Structural organization of the human kininogen
A;Reference number: A92545; MUID:85234583
                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 450-452,'x', 454,'x', 456 < LIT>
R; Straczek, J; Machi, F; le Nguyen, D.;
FEBS Lett. 373, 207-211, 1995
A; Title: Purification from human plasma of A; Reference number: S68059; MUID: 96033974
A; Accession: S68059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: protein
A; Residues: 380-389 < SASS>
R; Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok,
Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A; Title: Human cathepsin B and cysteine proteinase inhibitors
A; Reference number: S02482; MUID:89076517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R:Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K. Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A;Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin A;Reference number: A34030; MUID:88106632
A;Accession: A34030
A;Molecule type: protein
                                                                                                                                                                                             A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: A31905
A; Molecule type: protein
A; Residues: 381-389 <MAE>
                                                                                                                                                          A; Residues: 431-434 <STR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein A; Residues: 380-389 < KAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A; Accession: S02482
                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MUID:89076517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and kininogen
                                                                                                                                                                                                                                                                                                     മ
                                                                                                                                                                                                                                                                                                                                                                          Becchi, M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Olafsson,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            separation and
                                                                                                               Takagaki, Y.; Miyata,
                                                                                                                                                                                                                                                                                                     tetrapeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D.; Scicli,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ι.;
                                                                                                                                                                                                                                                                                                                                                                      Heulin, M.H.; Nabet,
                                      gene and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       by human cathepsin
                                                                                                                                                                                                                                                                                                 that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                examination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             M.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CPIs) in
                                                                                                                                                                                                                                                                                                 potentiates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      released
                                      model for its evolut
                                                                                                                   T.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of substrate-spe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inflammatory and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D.
                                                                                                                                                                                                                                                                                                     insulin-like
                                                                                                                                                                                                                                                                                                                                                                      ۳.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human
                                                                                                                                                                                                                                                                                                                                                                      Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     flu
A; Molecule type: protein A; Residues: 376-391 < KAT>
                                                                     A; Accession: A91923
```

```
A; Gene: GDB: KNG
A; Gene: GDB: KNG
A; Gross-references: GDB:125256; OMIM:228960
A; Gross-references: 327-327
A; Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
A; Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
C; Superfamily: kininogen; cystatin homology
C; Superfamily: kininogen; eystatin homology
C; Superfamily: kininogen; eystatin scaperimental <SIG>
F; 1-18/Domain: signal sequence #status experimental <SIG>
F; 19-644/Product: HMW kininogen II #status experimental <MAT1>
F; 19-379/Domain: signal sequence #status experimental <MAT2>
F; 19-379/Domain: signal sequence #status experimental <MAT2>
F; 19-379/Domain: eystatin homology <CY1>
F; 19-379/Domain: cystatin homology <CY1>
F; 142-53/Domain: cystatin homology <CY2>
F; 264-375/Domain: cystatin homology <CY2>
F; 380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <BDY>
F; 381-389/Product: bradykinin (kallidin II) #status experimental <CH>
F; 381-389/Product: bradykinin (kallidin II) #status experimental <CH>
F; 421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F; 431-434/Product: low molecular weight growth promoting factor #status experimental
F; 48, Psinding site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimental
F; 48, Psinding site: carbohydrate (Asn) (covalent) #status experimental
F; 389-390/Cleavage site: Met-lys (Kallikrein) #status experimental
F; 389-390/Cleavage site: A-hydroxyproline (Pro) (partial) #status experimental
F; 401, 33, 42, 546, 557, 571, 593, 528/Binding site: carbohydrate (Thr) (covalent) #status experimental
F; 401, 33, 424, 546, 557, 571, 593, 528/Binding site: carbohydrate (Thr) (covalent) #status experimental
F; 577/Binding site: carbohydrate (Ser) (covalent) #status experimental
                                                                                                                                                                                                                                                               A;Title: A single gene for bovine high molecular weight A;Reference number: A93317; MUID:84014106 A;Accession: A01282
                                                                                                                                                                                                                                                                                                                                                                         N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinin C;Species: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun C;Accession: A01282; A91923; A91941; A91938; B29559 R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakaninature 305, 545-549, 1983
A; Title: Studies on the structure of bovine kininogen: A; Reference number: A91923; MUID: 70180420
                                                                          R; Kato, H.; Nagasawa, S.; Suzi
J. Biochem. 67, 313-323, 1970
                                                                                                                     A;Cross-references: GB:V01492; GB:K01758; NID:g493; R;Kato, H.; Nagasawa, S.; Suzuki, T.
                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-619 < KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               xyproline residue
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Structural features of plasma kinins and kininogens.
A;Reference number: A91455; MUID:90255622
A;Contents: annotation; bradykinin
C;Comment: The HMW kininogen precursor and the LMW form are produced from the same
C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation or
C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is
C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilat
xyproline residue is present in the kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kininogen, HMW II precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R; Pierce, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52-57, 1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                  Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 98;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1; L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                         PIDN:CAA24736.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 644;
                                                                                                                                                                                                                                                                                                                                                                                                                 Nawa, H.; Nakanishi,
                                       cleavages
                                                                                                                                                                                                                                                                                                                                          and low molecular weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              II; prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22-Jun-1999
                                           of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          potent vasodilator of bradykinin.
                                           disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                           bonds
```

Iwanaga,

s.;

Suzuki,

+3

```
Result
No.
                                                                                                                                                                                                                                              Post-processing: Minimum Match
Maximum Match
Listing first
                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                         Run on:
Pred. No. is the number of score greater than or eque and is derived by analysis
                                                                                                                                                                Score
                                                                           54
4
60
60
50
50
50
50
50
50
50
50
50
49.5
48.5
48.5
48.5
7
44.8
44.8
44.8
44.8
7
7
5
5
                                                                                                                                                                                                               PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                               Query
Match Length DB
July 6, 2001, 09:18:02; Search time 73.59 Seconds (without alignments)
16.562 Million cell updates/sec
                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                              US-09-437-912-8
98
                                                                                                                                                                                                                                                                                              219241 segs, 76174552 residues
                                                                                                                                                                                                                                                                                                                        1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
219241
```

45	44	Δ.	42	41	40	39	3 8	37	36	35 5	34	ω	32	31	30
45.5	45	46	46	46	46	46	46	46	46	46	46	46.5	47	47	47
46.4	46.4	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	47.4	48.0	48.0	48.0
439	179	1213	1002	549	529	410	391	378	332	274	136	177	1037	208	98
2	N, I	N	N	N	2	N	N	N	2	N	N	N	Ν	N	2
S58327	A85217	A54063	T43236	T15506	T08684	T26757	T26756	T49164	S71224	T29574	JQ2266	S65780	D96786	T08132	JC5822
		TATA-binding prote	carboxypeptidase C	hypothetical prote	hypothetical prote	hypothetical prote	hypothetical prote	zinc transporter-1	xyloglucan endo-1,	hypothetical prote	cold acclimation p	glycine/proline-ri	protein F10A5.15 (	oleosin-like prote	NADH dehydrogenase

## ALIGNMENTS

oleosin-like prote oleosin-like prote probable sensor pr probable 2-compone gene pipsqueak pro gene pipsqueak pro zinc transporter z	gene hindsight pro gene hindsight pro hypothetical prote hemolymph antifung hypothetical prote cold stress protei oleosin-like prote hypothetical prote chorion protein s3		ption gen, HMW pre gen, HMW I p gen, HMW I p	0000    Material   Mat	THE CHARGE PARAMETERS ALIZANT . RECITION 1
A;Molecule type: protein A;Rolecule type: protein A; Killermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W. A;Keilermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W. A;Rofermann, J.; Molecular mass kininoge A;Rofermann acid sequence of the light chain of human high molecular mass kininoge A;Rofermance number: A27899	A;Molecule type: protein A;Rolecule type: protein R;Rellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W. Eur. J. Blochem. 154, 471-478, 1986 Eur. J. Blochem. 154, 471-478, 1986 A;Title: Completion of the primary structure of human high-molecular-mass kininogen. A;Reference number: A24871; MUID:86108361 A;Reference number: A24871	A;Accessinc S34422 A;Accessinc Hamber: ASTA A;	J. Biol. Chem. 260, 8601-8609, 1985 A;Title: Cloning and sequence analysis of cDNAs for human high molecular weight and large fearence number: A92544; MUID:85234582 A;Accession: A25276 A;Accession: A25276 A;Molecule type: mRNA A;Residues: 1-592,'I',594-644 <tak> A;Residues: 1-592,'I',594-644 <tak> A;Cross-references: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852 R;Auerswald, E.A.; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I. FEBS Lett. 321, 93-97, 1993 A;Title: Cloning, expression and characterization of human kininogen domain 3.</tak></tak>	sor [val pha-2-th n (kalli ns (man) sequence sea25276; , K:; Ta , Ks; Ta a human 90490; M	

В

355 KGGRGKGKKKGK 368

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Whiches 9; Conserv:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-623-679-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 1497
TYPE: PRT
ORGANISM: Homo sapiens
US-08-933-774-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-933-774-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQ ID NOS: 10
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID: NO 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 9, Application US/08623679 Patent No. 5674739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Shyjan, Andrew W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 7, Application US/08933774A Patent No. 6025137
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/412,431
APPLICATION NUMBER: US 08/412,431
APPLICATION NUMBER: US 08/412,431
APPLICATION INFORMATION:
NAME: Fasse, J. Peter
REGISTRATION NUMBER: 07.334/004001
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617/542-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION NUMBER: US/08/933,774A CURRENT FILING DATE: 1997-09-19 EARLIER APPLICATION NUMBER: US 08/623,679 EARLIER FILING DATE: 1996-03-29 EARLIER APPLICATION NUMBER: US 08/412,431 EARLIER FILING DATE: 1995-03-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE DIAGNOSIS, PREVENTION TITLE OF INVENTION: AND TREATMENT OF TUMOR PROGRESSION FILE REFERENCE: 07334/004003
                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/623,679 FILLING DATE: 29-MAR-1996 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson P.C.
STREET: 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Shyjan, Andrew W.
TITLE OF INVENTION: COMPOSIT
TITLE OF INVENTION: DIAGNOSII
TITLE OF INVENTION: PROGRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            355 KGGRGKGKKKKGK 368
                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY: USA
ZIP: 02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 KHGHGHGKHKNKGK 14
                                                                                                                                                                                                                                                                                                                                                                                                                                      M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPOSITIONS AND METHODS FOR THE DIAGNOSIS, PREVENTION AND TREATM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROGRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   44.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 44;
Pred. No. ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PREVENTION AND TREATMENT OF TUMOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

Search completed: July Job time: 190 sec

6

2001,

09:10:24

```
; INFORMATION FOR SEQ ID NO: $
; SEQUENCE CHARACTERISTICS:
; LENGTH: 1533 amino acids
; TYPE: amino acid
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-623-679-9
                                  δÃ
                                                                                                                                                         SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 9
LENGTH: 1533
TYPE: PRT
ORGANISM: Homo sapiens
US-08-933-774-9
   DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 15
US-08-933-774-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
APPLICANT: Shyjan, Andrew W.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE DIAGNOSIS,
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE DIAGNOSIS,
TITLE OF INVENTION: AND TREATMENT OF TUMOR PROGRESSION
FILE REFERENCE: 07334/004003
CURRENT PILION NUMBER: US/08/933,774A
CURRENT FILING DATE: 1997-09-19
EARLIER APPLICATION NUMBER: US/08/623,679
EARLIER APPLICATION NUMBER: US/08/412,431
                                                                    Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 9, Application US/08933774A Patent No. 6025137
                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 64.1
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 10
                                                                                                                                                                                                                                                                                EARLIER FILING DATE: 1995-03-29
355 KGGRGKGKKKKGK 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              355 KGGRGKGKKKKGK 368
                     1 KHGHGHGKHKNKGK 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 KHGHGHGKHKNKGK 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1533 amino acids
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44.9%;
64.3%;
                                                                                      44.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                  Score 44,
Pred. No. 1.6e+02;
----+-hes 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                      Length 1533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                    Indels
                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                      PREVENTION
                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

COMPUTER READABLE FORM: COMPUTER: IBM FOO OPERATING SYSTEM:

MEDIUM TYPE:

Floppy disk

SOFTWARE:

PatentIn Release #1.0, Version #1.30

IBM PC compatible SYSTEM: PC-DOS/MS-DOS/ASCII

```
Query Match
Best Local Similarity
"~+~hes 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TOPOLOGY: US-08-431-080-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JS-08-938-534-28
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 28, April 5916752
                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECHAN: (713) 789-2679
TELEX: 79-0024
                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                  SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 1085 amino aci
                                                                                         PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: SN 08/326,781
                         ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Gottschling, Daniel E. APPLICANT: Singer, Miriam S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Parker, David L. REGISTRATION NUMBER: 3
NAME: Parker, David REGISTRATION NUMBER:
                                              FILING DATE:
                                                           FILING DATE: APPLICATION NUMBER:
                                                                                                                          CLASSIFICATION:
                                                                                                                           APPLICATION NUMBER: US/0 FILING DATE: 26-SEP-1997 CLASSIFICATION: 536
                                                                                                                                                                                                  OPERATING SYSTEM: PC-DOS/MS-DOS/ASCII
                                                                                                                                                                                                                                                                COUNTRY: UI
                                                                                                                                                                                                                                                                                                            STREET: P.O. I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: FILING DATE: Octobe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KHGHGHGKHKNKG 13
                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KSGKSHIEHKNKG 533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                             TEXAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/08938534
                                                                                                                                                                                                                                                                                                                             P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1085 amino acids
                                                                                                                                                                                                                                                                             UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                          Arnold, White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   October 20, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Concurrently Herewith
                                              October 20, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                         Telomerase Compositions and Methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          44.9%;
61.5%;
                                                                                                                                                                                   Release #1.0, Version #1.30
                                                           SN 08/326,781
                                                                                           08/431,080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/431,080
                                                                                                                                                     US/08/938,534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 44;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2e+02
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
Query Match
Best Local Similarity
""" 8; Conserv
Query Match
Best Local Similarity
"~+~hes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TOPOLOGY: US-08-938-534-28
                                                                                                 US-08-623-679-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-623-679-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 7, Application US/08623679 Patent No. 5674739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                            TELEX: 200154
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Shyjan, A TITLE OF INVENTION: TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                       FILING DATE: 29-MAR-1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/412,431
FILING DATE: 29-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: AR TELECOMMUNICATION INFORMATION: TELEPHONE: (512) 418-3000 TELEFAX: (713) 789-2679 TELEX: 79-0924
                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/623,679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 617/542-5070
                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               521 KSGKSHIEHKNKG 533
                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
7.TP: 02110-2804
                                                                                                                                                                                                          TELEPHONE: 617/542-50
TELEFAX: 617/542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Fish a NATURE OF THE PROPERTY 225 Franklin Street
                                                                                                                                                                                                                                                                        NAME: Fasse, J. Peter REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE: MA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: si
                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER:
                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KHGHGHGKHKNKG 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1085 amino acids
                                                                                                                                              1497 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fish & Richardson P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Andrew W.
                               64.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.9%;
61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROGRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPOSITIONS AND METHODS FOR THE DIAGNOSIS, PREVENTION AND TREATMENT OF TUMOR
                                                                                                                                                                                                                                                                        32,983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ARCD:155/PAR
                                                                                                                                                                                                                                                         07334/004001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 44;
Pred. No.
                                 Pred. No. 1.6e+02;
                                              Score 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .2e+02
                                             Length 1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

1 KHGHGHGKHKNKGK 14

Conservative

Mismatches

Indels

0;

Gaps

```
RESULT 9
US-08-646-715-20
                                                                                                                                                                                                    ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-188-582-20
                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-208-742-2
                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                     TELEFAX: (415) 398-324
TELEX: 910 277299
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tent No.
                                                                            1163 KHKHRHSKDKDKERKD 1178
                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 1213 amino aci
                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 781-1989 TELEFAX: (415) 398-3249
                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Osman, Richard A
REGISTRATION NUMBER: 36,627
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1147 НИННИНЕНККККККИ 1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Weinzierl, Robert O.J.
TITLE OF INVENTION: TATA-BINDING PROTEIN ASSOCIATED FACTORS,
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING TAPS AND METHODS OF USE
NUMBER OF SEQUENCES: 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: Californ;
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/188,582 FILING DATE: 28-JAN-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: USA
ZIP: 94111-4187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                      1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 HGHGHGKHKNKGKKN 16
                                                                                                                                  Similarity
8; Conserv
                                                                                                                                                                                                                                              amino acid
    Application US/08646715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/08188582
                                                                                                                                                                                                                                                            1213 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Comai, Lucio
Dynlact, Brian D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Comai,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tanese, Naok
Wang, Edith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ruppert, Siegfried
Tanese, Naoko
                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hoey, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IBM PC compatible SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.9%;
                                                                                                                                               46.9%;
                                                                                                                                                                                                                                                                                        20:
                                                                                                                                                                                                                                                                                                                                                           A-57650-2/AJT/RAO
                                                                                                                                  Score 46; DB Pred. No. 70; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                            DB
70;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 4;
                                                                                                                                                           Length 1213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1199;
                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
Query Match
Best Local Similarity
"~+~hes 8; Conserv
                                                                                                                                                                                                                        US-08-431-080-28
                                                                                                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: protein US-08-646-715-20
                                                                                                                                                                                      Sequence 28, Application US/08431080 Patent No. 5698686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5637686
GENERAL INFORMATION
                                                                                                  GENERAL INFORMATION:
APPLICANT: GOTTSCHING, Daniel E.
APPLICANT: Singer, Miriam S.
TITLE OF INVENTION: Telomerase CO
NUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, v
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/646,715
FILING DATE: 09-MAY-1996
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                           1163 KHKHRHSKDKDKERKD 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/188,582
FILING DATE: 28-JAW-1994
ATTORNEY/AGENT INFORMATION:
                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 1213 amino aci
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 781-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Weinzierl, Robert O.J.
TITLE OF INVENTION: TATA-BINDING PROTEIN ASSOCIATED
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING TAFS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (*+-, 910 277299
                                                  STREET:
                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                         1 KHGHGHGKHKNKGKKN 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94111-4187
                                  Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 California
                 TEXAS
                                                  E: Arnold, White & Durkee P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E: FLEHR, HOHBACH, TES
4 Embarcadero Center,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1213 amino acids
UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ruppert, Siegfried
Tanese, Naoko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tjian, Robert
Comai, Lucio
                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hoey, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dynlact, Brian D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Wang, Edith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Richard A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      398-3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Robert
                                                                                                                                                                                                                                                                                                                                                                         46.9%;
50.0%;
                                                                                                    Telomerase Compositions and Methods 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/646,715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A-57650-2/AJT/RAO
                                                                                                                                                                                                                                                                                                                                                                         Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TEST, ALBRITTON & HERBERT
er, Suite 3400
                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                        DB 70;
                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                           Length 1213;
                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF USE
                                                                                                                                                                                                                                                                                                                                                         Gaps
```

TELEPHONE:

415/705-8410

```
; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
US-08-072-064-6
В
                           δÃ
                                                                                                                                          ; TOPOLOGY: unknown ; MOLECULE TYPE: pept: US-08-072-064-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-072-064-8
                                                               Matches
                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 6008046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 8, Application US/08072064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 415/397-8338 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 770,881
FILING DATE: 04-OCT-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
ADDRESSEE: PETER G. CARROLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 637 amino acid
                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: JACKSON, MEYER B.
TITLE OF INVENTION: DRUG AND PESTICIDE SCREENING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: FFRENCH-CONSTANT, RICHARD H. APPLICANT: JACKSON, MEYER B.
                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             457 EHGHGHGHH 465
457 ЕНСИСНЕНН 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/072,064 FILING DATE: 19930602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 637 amino TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 32,837 REFERENCE/DOCKET NUMBER: OPI
                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: San Francisco
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KHGHGHGKH 9
                            1 KHGHGHGKH 9
                                                                                                                                                                                         H: 637 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                                                                          CARROLL, PETER G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           220 Montgomery Street, Suite 2200
                                                                                                                                                                                                                                                            %: 415/705-8410
415/397-8338
                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PatentIn Release #1.0, Version #1.25
                                                                                                                                                            peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              51.0%;
77.8%;
                                                                            51.0%;
77.8%;
                                                                                                                                                                                                                                              8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6.
                                                                                                                                                                                                                                                                                                               OPHD-00574
                                                                            Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 3;
11;
                                                                                            DB 3;
                                                                                             Length 637;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 637;
                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                               0;
```

```
Query Match
Best Local Similarity
----hes 7; Conserv:
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                          US-09-208-742-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US92-08558-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US92-08558-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application PC/TUS9208558 GENERAL INFORMATION:
                                            SOFTWARE: FastSEQ
SEQ ID NO 2
                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                          Sequence 2, Application US/09208742 Patent No. 6174679
                                                                                         CURRENT FILING DATE: 1998-12-10
                                                                                                                                     APPLICANT: Kaufmann, Joerg
TITLE OF INVENTION: CIF150/hTAFII150 is Necessary
TITLE OF INVENTION: Cycle Progression
                                                                                                                           FILE REFERENCE: 1453.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (203)268-1951
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                             NUMBER OF SEQ ID NOS:
ORGANISM: human
                             ENGTH: 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: CR
TELECOMMUNICATION INFORMATION:
TELEPHONE: (203)268-1951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: Macintosh
OPERATING SYSTEM: MS-DOS
SOFTWARE: Microsoft World 4.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/08558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Cornell Research Foundation, Inc.
TITLE OF INVENTION: MOLECULAR CLONING AND TRANSFORMATION OF CYCLODIENE RESISTAN NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POSITION IN GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: |
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: October 4th ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                             457 EHGHGHGHH 465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: George M. Yahwal REGISTRATION NUMBER: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 25 Sky
CITY: Trumbull
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MAP POSITION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHROMOSOME/SEGMENT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                              1 KHGHGHGKH 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    06613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Connecticut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25 Skytop Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (203)268-1951
(203)268-1951
TD NO: 1:
                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yahwak & Associates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             approximately map unit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                19921002
                                                               Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                              51.0%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/07/770,881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26,824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CRF
                                                                                                                                                                                                                                                                                                                                                                                                Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                             Score 50;
                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             D-1052
                                                                                                                                                                                                                                                                                                                                                                                                             DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26
                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                             Length 637;
                                                                                                                                                             for Cell
                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

0;

US-08-072-064-1

Sequence 1, Patent No.

GENERAL INFORMATION:

6008046

Application US/08072064

```
밁
                                                                                                                                                                                                                                                                                                       γ
                                                                                                                                                                                                US-08-072-064-4
                                                                                                                                                            Sequence 4, Application US/08072064 Patent No. 6008046
                                                        ARPLICANT: FERENCH-CONSTANT, RICHARD H.
APPLICANT: JACKSON, MEYER B.
APPLICANT: JACKSON, MEYER B.
APPLICANT: DRUG AND PESTICIDE SCREENING
                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: 415/705-8410
TELEFAX: 415/397-8338
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 637 amino acids
                                                 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 04-OCT-1991
ATTORNEY/AGENT INFORMATION:
NAME: CARROLL, PETER G.
REGISTRATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: OPHD-00574
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POSITION IN GENOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: Patentin Rel
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: PETER G. CARROLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: FERENCH-CONSTANT, RICHARD H.
APPLICANT: JACKSON, MEYER B.
TITLE OF INVENTION: DRUG AND PESTICIDE SCREENING
NUMBER OF SEQUENCES: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                  457 ЕНСИСИСИН 465
STREET:
                                                                                                                                                                                                                                                                                                                                         Local Similarity nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                             CHROMOSOME/SEGMENT: III; polytene subregion 66F MAP POSITION: approximately map unit 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US
FILING DATE: 19930602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET:
                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                       1 KHGHGHGKH 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
San
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      California
               220 Montgomery Street, Suite 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   220 Montgomery Street,
                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PatentIn Release #1.0, Version #1.25
                                 PETER G. CARROLL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                          51.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  us 770,881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/08/072,064
                                                                                                                                                                                                                                                                                                                                                          Score 50; DE
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Suite 2200
                                                                                                                                                                                                                                                                                                                                                                         DB 3; Length 637;
                                                                                                                                                                                                                                                                                                                                       1; Indels
                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                       Gaps
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; MOLECULE TYPE: peptide US-08-072-064-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-072-064-6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Application US/08072064 Patent No. 6008046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                COUNTRY: United States of America
ZIP: 94104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                           FILING DATE: 04-OCT-1991
ATTORNEY/AGENT INFORMATION:
                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 770,881
FILING DATE: 04-OCT-1991
                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: PETER G. CARROLL
                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: FFRENCH-CONSTANT, RICHARD H.
APPLICANT: JACKSON, MEYER B.
TITLE OF INVENTION: DRUG AND PESTICIDE SCREENING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: OP
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415/705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE: 04-OCT-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 770,881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Rel CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             457 EHGHGHGHH 465
                                                                                                                                       APPLICATION NUMBER: UPFILING DATE: 19930602 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: PETER G. CARROLL
STREET: 220 Montgomery Street, Suite 2200
CITY: San Francisco
                               NAME: CARROLL, PETER REGISTRATION NUMBER:
                  REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                       STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: CARROLL, PETER G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 кнононоки 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMINO ACID
                                              CARROLL, PETER G
                                                                                                                                                                                                                                                                                                                                       California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                415/397-8338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19930602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51.0%;
77.8%;
                                                                                                                                                                          us/08/072,064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Release #1.0, Version #1.25
                               32,837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US/08/072,064
                OPHD-00574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPHD-00574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 50;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 637;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

```
Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq length: 0 seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Issued_Patents_AA:*
1: /cgn2_6/ptodata/2
2: /cgn2_6/ptodata/2
3: /cgn2_6/ptodata/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match Length
      Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-437-912-8
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    July 6, 2001, 09:10:23; Search time 56.74 Seconds (without alignments) 5.681 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              193259 seqs, 20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KHGHGHGKHKNKGKKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/FCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/pcTUS_COMB.pep:*
      637
637
637
11199
11199
11085
11085
11085
11085
11085
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
11533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
US-08-137-614A-26
US-08-072-064-1
US-08-072-064-6
US-08-072-064-8
US-08-072-064-8
US-08-072-085-8-1
US-09-208-742-2
US-08-646-715-20
US-08-646-715-20
US-08-933-774-9
US-08-93-31B-4
US-09-057-570-2
US-09-057-570-7
US-08-758-520-9
US-09-057-570-7
US-08-758-520-9
US-09-057-570-7
US-08-758-520-9
US-09-057-570-7
US-08-758-520-9
US-09-057-570-7
US-08-758-520-9
US-09-057-570-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                              sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
   1. Appli
6. Appli
1. Appli
1. Appli
1. Appli
2. Appli
20. Appli
20. Appli
28. Appli
28. Appli
29. Appli
30. Appli
30. Appli
4. Appli
6. Appli
6. Appli
6. Appli
6. Appli
7. Appli
9. Appli
9. Appli
9. Appli
10. Appli
11. Appli
12. Appli
12. Appli
13. Appli
14. Appli
15. Appli
16. Appli
17. Appli
18. Appli
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26, Appli
1, Appli
4, Appli
6, Appli
8, Appli
1, Appli
1, Appli
2, Appli
```

Вþ δ δ

Query Match
Best Local Similarity
Matches 7; Conserv

Conservative

Score 50; Préd. No. Mismatches

μ. •• 

Length 617; Indels

0; Gaps

RESULT 1  US-08-137-614A-26  US-08-137-614A-26  Sequence 26, Application US/08137614A  Patent No. 5487976  GENERAL INFORMATION:  APPLICANT: Knipple, Douglas C.  APPLICANT: Knipple, Douglas C.  APPLICANT: Knipple, Douglas C.  APPLICANT: Henderson, Joseph E.  TITLE OF INVENTION: Gamma-Aminobutyric Acid (GABA)  NUMBER OF SEQUENCES: 31  CORRESPONDENCE ADDRESS:  ADDRESSEE: Nixon, Hargrave, Devans & Doyle  STREET: Clinton Square, P.O. Box 1051  CITY: Rochester  STATE: New York  COUNTRY: USA  ZIP: 14603  COMPUTER READABLE FORM:  MEDIUM TYRE: FIDAPPY disk  COMPUTER READABLE FORM:  MEDIUM TYRE: FIDAPPY disk  COMPUTER READABLE FORM:  MEDIUM TYRE: FOCT-1993  CORRENT APPLICATION NUMBER: US/08/137,614A  FILING DATE: 15-CCT-1993  CLASSIFICATION: 45  APPLICATION NUMBER: 34,103  REFERENCE/DOCKET NUMBER: 19603/120  TELECOMMUNICATION INFORMATION:  TELEPHONE: (716)263-1636  TELEFRAX: (716)263-1636  TELEFRAX: (716)263-1636  TELEFRAX: (716)263-1636  TELEGGTH: 617 amino acids  TYPE: amino acid  TOPOLOGY: linear  MOLECULE TYPE: protein  US-08-137-614A-26	28. 42 42.9 456 4 US-08-709-974A-11 29. 41 41.8 388 2 US-08-382-505-2 30 41 41.8 542 1 US-08-623-679-3 31 41 41.8 542 1 US-08-623-679-3 32 41 41.8 542 3 US-08-623-679-3 33 41 41.8 903 1 US-08-750-532-1 41 41.8 1398 1 US-08-750-532-1 41 41.8 1398 1 US-08-750-532-1 41 41.8 1398 1 US-08-750-52-4 40.5 41.3 800 1 US-08-785-052-4 41 40 40.8 13 1 US-08-484-184-2 40 40.8 13 1 US-08-484-184-2 41 40 40.8 13 1 US-08-484-950-6 42 40 40.8 13 1 US-08-649-953-1 43 40 40.8 13 1 US-08-269-929-6 44 40 40.8 13 1 US-08-269-929-6 45 40 40.8 13 1 US-08-269-93-12 46 40 40.8 13 1 US-08-269-93-12 47 40 40.8 13 1 US-08-269-983-19 48 40 40.8 14 1 US-07-694-983-19 49 40 40.8 15 1 US-07-694-983-12	
Receptor Subunit	Sequence 11, Appli Sequence 2, Appli Sequence 3, Appli Sequence 3, Appli Sequence 4, Appli Sequence 4, Appli Sequence 6, Appli Sequence 11, Appli Sequence 11, Appli Sequence 12, Appli Sequence 12, Appli Sequence 12, Appli Sequence 13, Appli Sequence 13, Appli Sequence 12, Appli Sequence 12	

```
Search completed: July Job time: 992 sec
                                                                                                                          밁
                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                    RA Abril J.F., Adpayani A., An H.-J., Andrews-pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beleson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier R., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Dietz S.M.,
RA Cherry J.M., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Hortin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Lilang Y., Lin X.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Rainert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Rainert K., Remington K., Sunners R.D.C., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Smith T.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Yeb R., F., Zaveri J.S., Zhan M., Zhang G., Zhao Q.A.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou S., Zhu X., Smith H.O.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou S., Zhu X., Smith H.O.,
RA Zheng X.H., Wang S., Wang S., Dan X., Smith H.O.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                       Matches 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIJUNE CLINICA CONTROL MEDIJUNG C.A., GOCAYNE J.U.,
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.U.,
Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                                                                                                                            "The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).
EMBL; AE003678; AAF54238.1; -.
F1yBase; F9gn0037885; CG11718.
SEQUENCE 819 AA; 92141 MW; E7F295E74FE2A72B CR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-BERKELEY;
MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster (Fruit fly).
                                                                                                                  292 KHGKGHKNGKHGSKGSSS 309
                                                                                                                                               1 KHGHGH--GKHKNKGKKN 16
                                                                                                                                                                                                                       Conservative
                       6
                                                                                                                                                                                                                                               52.0%;
55.6%;
                       2001, 09:25:56
                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                               Score 51; DB Pred. No. 6.4;
                                                                                                                                                                                                                                                                                                                                                  E7F295E74FE2A72B CRC64;
                                                                                                                                                                                                                                                                      DB 5;
                                                                                                                                                                                                                       4; Indels
                                                                                                                                                                                                                                                                      Length 819
                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                     1:
```

THIS PAGE BLANK (USPTO)

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
                                                                                                                                                                                                                                                                                                                                                         41
41
40
40
40
39
39
39
38
5
39
38
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match Length
    4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

4444

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Issued_Patents_AA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193259 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-437-912-9
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6, 2001, 09:10:24; Search time 56.74 Seconds (without alignments) 5.681 Million cell updates/sec
  1507
1382
1382
376
376
60
3177
38177
38177
79
606
606
606
606
608
83
345
293
293
293
293
193
194
195
1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gapext 0.5
                                                                                                                                                                                 US-08-594-031-100
US-08-594-031-102
US-08-872-979-8
US-08-117-952-787
US-08-117-952-788
US-08-477-451-4
US-08-750-717-2
US-08-916-5768-4
US-09-204-764-3
US-09-203-716-2
US-09-203-716-2
US-09-203-716-2
US-09-203-716-2
US-07-885-0898-30
US-07-885-0898-30
US-07-885-0898-18
                                                                                           US-09-077-977A-1
US-08-484-438-40
5514582-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
US-07-885-089B-37
US-07-885-089B-36
US-07-885-089B-34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-468-558-5
US-08-737-715-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                           Sequence 2, Appli
Sequence 3, Appl
Sequence 30, Appl
Sequence 33, Appl
Sequence 16, Appl
Sequence 18, Appl
Sequence 18, Appl
                   Sequence 1, Appli
Sequence 40, Appl
Patent No. 5514582
Patent No. 5202428
Sequence 37, Appl
Sequence 36, Appl
                                                                                                                                                                                                                                                                                                   sequence 5, Appli
sequence 100, App
sequence 100, App
sequence 102, App
sequence 787, App
sequence 788, App
sequence 788, App
sequence 2, Appli
sequence 2, Appli
sequence 3, Appli
sequence 4, Appli
              Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5268270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-468-558-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
5268270-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5268270-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches '10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                     STATE: Mass
COUNTRY: Un
ZIP: 02173
                                                                                                                                                                                                                                                                                                             CITY: Lexington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 1507
```

45	44	43	42	41	40	39	38 8	37	36	35	34	ω ω	32	ω μ	30	29	28
37	37	37	37	37	37	37	37	37	37	37	37	37	37	3 <b>7</b>	37	37	37
37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8	37.8
542	542	542	533	462	384	384	384	384	352	352	286	263	252	247	247	226	192
ω	<u>, , , , , , , , , , , , , , , , , , , </u>	ىبر	N	N	σ	4	N	ר	N	_	w	Н	N	2	N	N	<u> </u>
US-08-933-774-3	US-08-623-679-3	US-08-412-431-3	US-08-225-488-2	US-08-484-438-42	PCT-US92-09124-2	US-09-066-481-2	US-08-445-342A-2	US-07-783-706-2	US-08-913-581-2	US-08-785-052-2	US-09-203-716-1	US-07-906~983-2	US-07-885-089B-7	US-07-885-089B-8	US-07-885-089B-2	US-07-885-089B-35	US-08-208-008C-9
Sequence 3, Appli	Sequence 3, Appli	Sequence 3, Appli	Sequence 2, Appli	42,	Sequence 2, Appli	Sequence 1, Appli	Sequence 2, Appli	Sequence 7, Appli	Sequence 8, Appli	Sequence 2, Appli	Sequence 35, Appl	Sequence 9, Appli					

```
NEGATIVE HOST CELLS

NUMBER OF SEQUENCES: 6
CURRENT APPLICATION NUMBER: US/07
APPLICATION NUMBER: US/07
FILING DATE: 01-JUL-1987
SEQ ID NO:2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5268270

APPLICANT: Meyer, Thomas F.:
TITLE OF INVENTION: PROCESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 5, Application US/08468558 Patent No. 5877280
                                                                                                                                                                                                                                                                                  APPLICANT: Wetmur, James G.
TITLE OF INVENTION: Cloning and Expression of Thermostable
TITLE OF INVENTION: MutS Genes and Proteins and Uses Theref
NUMBER OF SEQUENCES: 38
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hamilton, Brook, Smith & Reynolds, P.C.
STREET: Two Militia Drive
SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/468,556 FILING DATE: 06-JUN-1995 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION:
                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: DC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 HDNAGTVKGNGEHH-WKT 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 HKNKG--KKNGKHNGWKT 16
                                                                                                                                                                                                                              Massachusetts
United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Thomas f.; Halter, Roman; Pohlner, Johnnnes N: PROCESS FOR PRODUCING PROTEINS USING GRAM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               43.4%;
                                                             US/08/468,558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/07/171,872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 42.5; DB 6;
Pred. No. 1.5e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                      Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 6;
                                                                                                        #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1507;
                                                                                                                                                                                                                                                                                                                                                                              Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

Granahan, Patricia

밁

```
Query Match
Best Local Similarity
"--*ches 7; Conserv?
                                                                                                                    ; MOLECULE TYPE: US-08-737-715-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
watches 8; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-737-715-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; MOLECULE TYPE: protein US-08-468-558-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/08737715 Patent No. 5958685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 793 amino acids
                                                                                                                                                                          TELEFAX: (202)293-7860
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
SEQUENCE 1382 anino acid
                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: Q-
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: MS
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-861-6240
                                                                                                                                                                                                                                                                                                               FILING DATE: 12-MAY-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Ebina, Yousuke
TITLE OF INVENTION: MUTANT HUMAN INSULIN RECEPTOR DNA
NUMBER OF SEQUENCES: 5
                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  772 KNNTKKNGKSN 782
                                                                                                                                                   TOPOLOGY:
                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                NAME: Nakamura, Dean H.
REGISTRATION NUMBER: 33,981
                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: JP 1
                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/0
FILING DATE: 12-NOV-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: 'D.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Washington
                                                                                                                                                                                                                                        TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER:
1 HKNKGKKNGK 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 KNKGKKNGKHN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     l: 793 amino acids amino acid
                                                                                                                                                                               1382 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: SUGHRUE, MION, ZINN, MACPEA
2100 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                           (202)293-7860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    617-861-9540
                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                        (202)293-7060
                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41.8%;
72.7%;
                                                       41.8%;
                                                                                                                                                                                                                                                                                                                                                JP 134827/1995
                                                                                                                                                                                                                                                                                                                                                                                                        US/08/737,715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32,227
                                                                                                                                                                                                            2:
                                                                                                                                                                                                                                                                     Q-43323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MSM94-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                        Score 41; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZINN, MACPEAK & SEAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 41;
Pred. No.
                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.4e+02
                                    лв т,
2.3e+02;
2;
                                                                      Length 1382;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 793
                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                         ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                         Gaps
                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
밁
                                                                                                                                                                                                                                                                                                                                               ; FRAGMENT TYPE: ; ORIGINAL SOURCE: US-08-594-031-100
                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Fig. 5; Conserv
                                                                                                                                        US-08-594-031-102
                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 4
US-08-594-031-100
                                                                                                           Sequence 102, Application US/08594031 Patent No. 5783182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 100, Appl Patent No. 5783182
                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: METHOD FOR IDENTIFYING METASTATIC SEQUENCES NUMBER OF SEQUENCES: 175
CORRESPONDENCE ADDRESS:
ADDRESSEE: PAYOR
                            APPLICANT: THOMPSON, Timothy C.
TITLE OF INVENTION: METHOD FOR IDENTIFYING METASTATIC SEQUENCES
NUMBER OF SEQUENCES: 175
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                MOLECCE NO
ANTI-SENSE: NO
ANTI-SENSE: NO
TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 20004-2400
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1363 HMNGGKKNGR 1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION: TELEPHONE: 202-639-7700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/006,838
                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                      114 DGKHHGWR 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 202 - 639-7890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM Compatible OPERATING SYSTEM: DOS SOFTWARE: FastSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1299 Pen
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Remenick, James REGISTRATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/0 FILING DATE: 30-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: DC
              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                                                                                                                                                                                                      8 NGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: BAKER & BOTTS, L.L.P.
STREET: 1299 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
E: BAKER & BOTTS, L.L.P.
1299 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  376 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08594031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                  40.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/594,031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36,902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0A146-0110
                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                  DB 1;
92;
                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                              Length 376;
                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                  Gaps
```

COMPUTER READABLE FORM: MEDIUM TYPE: Diskette

COUNTRY:

USA

20004-2400

COMPUTER:

IBM Compatible

```
Query Match
Best Local Similarity
Thes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; FRAGMENT TYPE:
; ORIGINAL SOURCE:
US-08-594-031-102
                                                                                                                                                                                                                                                                                                                                                                  US-08-872-979-8
                                                                                                                                                                                                                                                                                                                                                  Sequence 8,
                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                     tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/872,979
FILING DATE: Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE NO PROTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 36,902
REFERENCE/DOCKET NUMBER: 0A
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-639-7700
                                                                                                                                                                                                                          NUMBER OF SEQUENCES: E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/006,838
FILING DATE: 16-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
                                                                                                                    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                       APPLICANT: Lal, Preeti
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: TWO NEW HUMAN MEMBRANE FUSION PROTEINS
                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 16-NOV-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                             114 DGKHHGWR 121
                                                   MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
                                                                                                                                                                  STREET: 3174 PO:
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 30-JAN CLASSIFICATION: 435
                                                                                                                                  ZIP: 94304
                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: si
                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8 NGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPOLOGY:
                                                                                                                                                                                                                                                                                                                                   , Application US/08872979 6074844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Remenick, James
                                                                                                                                                                 CA
                                                                                                                                                                                               E: Incyte Pharmaceuticals, Inc 3174 Porter Drive
                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      376 amino acids
                                                                                                                                                                                                                                                                                                       Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    202-639-7890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UMBER: US/08/594,031
30-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0A146-0110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 40; DB 1;
Pred. No. 92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-117-952-787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; CLONE:
US-08-872-979-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 787, Application US/08117952 Patent No. 5851760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                TELEFAX: 619-546-9392
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
TYPE: amino acid
                                                                                                                                                                  CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/
FILING DATE: 15-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Reiter, Stephen E.
REGISTRATION NUMBER: 31,19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
                                                                                                                                  REGISTRATION NUMBER: 31,192
REFERENCE/DOCKET NUMBER: P4
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/117,952
FILING DATE: 07-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 422 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-855-0555
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: METHOD FOR GENERATION OF SEQUENCE TITLE OF INVENTION: SAMPLED MAPS OF COMPLEX GENOMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AMEDILLE
LIBRARY: GELL
TONE: 338658
                                                                                TELEPHONE: 619-546-9392
                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Los Angeles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86 KKKNKKKGKEKGGK 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Billings, Lucy J. REGISTRATION NUMBER: 36,749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 KNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                   90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ME: Pretty, Schroeder, Brueggemann & Clark
444 South Flower Street, Suite 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Evans, Glen A.
Smith, Michael W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenBank
                                                                                                                        619-546-4737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40.8%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     METHOD FOR GENERATION OF SEQUENCE
                                                                                                                                                                                                                                        US 08/078,471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                        P41 9423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PF-0320 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 3;
1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

0;

```
RESULT 9
US-08-477-451-4
                                                                                                                   B
                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
"herhes 8; Conserve
                                                                                                                                                                                                                                                                     ; MOLECULE TYPE:
; FRAGMENT TYPE:
US-08-117-952-788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; FRAGMENT TYPE: internal US-08-117-952-787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-117-952-788
             Sequence 4, Application US/08477451 Patent No. 5928865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 788, Appl Patent No. 5851760
                                                                                                                                                                                                                  Query Match
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Reiter, Stephen E.
REGISTRATION NUMBER: 31,192
REFERENCE/DOCKET NUMBER: P41 9423
TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-546-4737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/078,471
FILING DATE: 15-JUN-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 797
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pretty, Schroeder, Brueggemann & Clark
STREET: 444 South Flower Street, Suite 2000
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Evans, Glen A.
APPLICANT: Smith, Michael W.
TITLE OF INVENTION: METHOD FOR GENERATION OF SEQUENCE
TITLE OF INVENTION: SAMPLED MAPS OF COMPLEX GENOMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                                                                                 Local Similarity tes 8; Conserv
                                                                                                                   10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/117,952 FILING DATE: 07-SEP-1993
                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10 GKKNSPHEGKRIWWK 24
                                                                                                                                    5 GKKNGKHNG----WK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 GKKNGKHNG----WK 15
                                                                                                                 GKKNSPHEGKLIWWK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Los Angeles
                                                                                                                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08117952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                      619-546-9392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                      unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                   protein
internal
                                                                                                                                                                                                 39.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39.8%;
                                                                                                                                                                                   0;
                                                                                                                                                                                                   Score 39; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 39;
Pred. No.
                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                  Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 60;
                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                ببر
• •
```

```
Query Match
Best Local Similarity
6; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-750-717-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: US-08-477-451-4
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/08750717
Patent No. 6180109
                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                           APPLICANT: MOORMANN, RO
APPLICANT: VAN RIJN, PO
TITLE OF INVENTION: Nuc
TITLE OF INVENTION: Str.
TITLE OF INVENTION: The
TITLE OF INVENTION: Inf.
NUMBER OF SEQUENCES: 11
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 3177 amino aci
                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: PC-DO SOFTWARE: Patentin Relaction Data:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Covacci, Antonello
TITLE OF INVENTION: Helicobacter Pylori Cagi Region
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
TELEPHONE: 510-601-2708
TELEFAX: 510-655-3542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: McClung, Barbara G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  910 KKNNRYNGYK 919
                                                                                                                                                        COUNTRY: USA
ZIP: 22202
                                                                                                                                                                                           STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/08/477,451 FILING DATE: 07-JUN-1995 CLASSIFICATION: 435
                                                                                                                                                                                                           CITY: Arlington
                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: McClung, Barbara (REGISTRATION NUMBER: 33, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
CLASSIFICATION:
                                                                                                                   MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                               APPLICATION NUMBER:
                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 KKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94608-2916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CA
                                                                                                                                                                                                                            E: YOUNG & THOMPSON 745 South 23rd Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3177 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4560 Horton Street
                                                                                                                                                                                                                                                                                                                                                                    VAN RIJN, Petrus A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                    MOORMANN, Robertus J. M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chiron Corporation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             single
                                                                                                                                                                                                                                                                                                                Nucleotide Sequences of Pestivirus
Strains, Polypeptides Encoded by These Sequences and Use
Thereof for Diagnosis and Prevention of Pestivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39.8%;
                                                                                                                                                                                                                                                                                                   Infections
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        33,113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0335.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.1e+03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 3177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

밁 Qγ

PRIOR APPLICATION DATA:
APPLICATION NUMBER:

FILING DATE:

17-JUN-1994

EP 94201743.5

```
; TOPOLOGY: 11; MOLECULE TYPE: US-08-750-717-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-883-534-3
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 606 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     quence 3, Applic
tent No. 5846777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 32,925
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-521-2297
TELEFAX: 703-685-0573
TELEX: 248425 FMDOCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3262 HKMKTLCPGSSLGRHNDW 3279
                                                                             NAME: Billings, Lucy J. REGISTRATION NUMBER: 36,749 REGISTRATION NUMBER: PETELECOMMUNICATION INFORMATION: TELEPHONE: 415-855-555
                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                      CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: PATCH, Andrew J.
REGISTRATION NUMBER: 32,
                                                                                                                                                                  FILING DATE:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 3898 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Corley, Neil C.
TITLE OF INVENTION: TWO NEW WD-40 PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 44.4 hes 8; Conservative
                                                                                                                                                                                                                                                                                                                         OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                               CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                       FILING DATE:
                                                                   TELEFAX: 415-845-4166
                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 HKNK----GKKNGKHNGW 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                               94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/08883534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bandman, Olga
Lal, Preeti
                                                                                                                                                                                                                                                                                                                                        IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO PCT/NL95/00214
                                                                                                                                                                                                                                                                           US/08/883,534
                                                                                                                    PF-0332 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 39; DB 4;
Pred. No. 1.3e+03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲,
```

В ρy

329 HKNGGKSYIYSGSHDG 344

1 HKNKGKK---NGKHNG 13

Matches

Local Similarity hes 8; Conserv

Conservative

2.4e+02;

Indels

ω ••

Gaps

```
US-09-204-764-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
US-09-204-764-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-883-534-3
                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/09204764 Patent No. 6025464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                      INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 606 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: single
TOPOLOGY: linear
IMMEDIATE SOURCE:
LIBRARY: NEUTGMT01
CLONE: 1221143
                                                                                      IMMEDIATE SOURCE:
LIBRARY: NEUTGMT01
CLONE: 1221143
                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION: TELEPHONE: 415-855-0555
                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/204,764
                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Corley, Neil C.
TITLE OF INVENTION: TWO NEW WD-40 PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           329 HKNGGKSYIYSGSHDG 344
                                                                                                                                 TOPOLOGY:
                                                                                                                                             STRANDEDNESS:
                                                                                                                                                             TYPE:
                                                                                                                                                                                                                                TELEFAX: 415-845-4166
                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLONE:
                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 HKNKGKK---NGKHNG 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94304
                                                                                                                                                          amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lal, Preeti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bandman,
                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                           IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Diskette
                                                                                                                                           single
                 39.3%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01ga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39.3%;
                                                                                                                                                                                                                                                                                                                                                08/883,534
                                                                                                                                                                                                                                                                                       36,749
Score 38.5; D
Pred. No. 2.4e
2; Mismatches
                                                                                                                                                                                                                                                                           PF-0332 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 38.5;
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DВ
                              Length 606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
```

US-08-916-576B-4

Patent No. Sequence 4,

, Application US/08916576B 6171816

GENERAL INFORMATION:

APPLICANT:

```
; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-916-5768-4
                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                 US-09-203-716-2
                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 43...
7; Conservative
                           Sequence 2, Application US/09203716
Patent NO. 6001653
GENERAL INFORMATION:
APPLICANT: Crooke, Stanley T.
APPLICANT: Wu, Hongjiang
TITLE OF INVENTION: Human RNase H Compositions and Uses Thereof
FILE REFERENCE: ISPH-033
CURRENT APPLICATION NUMBER: US/09/203,716
CURRENT FILING DATE: 1998-12-02
EARLIER APPLICATION NUMBER: 60/067,458
EARLIER FILING DATE: 1997-12-04
NIMBER OF SECTOR NO. 1998-12-04
SOFTWARE: PatentIn
                 NUMBER OF SEQ ID NOS: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 149
TELECOMMUNICATION INFORMATION: (202) 371-2600
TELEPHONE: (202) 371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/024,347
FILING DATE: 23-AUG-1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: STEFFE, ERIC K. REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 1100 NEW CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                       27 HNGLGKGFGDHIHWRT 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                               1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20005-3934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           172 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: STERNE, KESSLER, GOLDSTEIN & FOX, P.L.L.C. 1100 NEW YORK AVENUE, SUITE 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENDRESS, GREGORY A. IVENTION: NOVEL HUMAN GROWTH FACTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YU, GUO-LIANG
DILLON, PATRICK J.
EBNER, REINHARD
                                                                                                                                                                                                                                                                                                                                                                                                                                     38.8%;
43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/916,576B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               36,688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1488.0500001
                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 38; DE
Pred. No. 84;
                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 172
                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

밁

93 HNAMQLKPGKPNGWR 107

```
; SEQ ID NO 2
; LENTH: 293
; TYPE: PRT
; ORGANISM: Gallus s
US-09-203-716-2
Ş
                                                                                                   ; MOLECULE TYPE: protein US-08-183-214-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-183-214-12
                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 12, Appl
Patent No. 571681
                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                     APPLICATION: 14-JAN-100.

CLASSIFICATION: 435

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/888,231

APPLICATION APPLICATION:

TTT NG DATE: 22-MAY-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity 60.0 Matches 6; Conservative
                                                                                                                                                                        TELEFAX: 415-543-5043 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                  FILING DATE: 22-MAY-1992
ATTORNEY/AGENT INFORMATION:
NAME: Weber, Kenneth A.
REGISTRATION NUMBER: 31,677
REFERENCE/DOCKET NUMBER: 1528
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-543-9600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/183,21
                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compati
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend
STREET: One Market Plaza, Steuart Street Tower
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             230 ENWKTNGWRT 239
                             Local Similarity 46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: US
ZIP: 94105
                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY:
                                                                                                                                                          LENGTH:
1 HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7 KNGKHNGWKT 16
                                                                                                                                         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/08183214
                                                                                                                                                         345 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Takada, Tatsuyuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nightingale, Maria S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Stanley,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Moss, Joe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Murtagh,
                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gp
                                          38.8%;
46.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLONES ENCODING MAMMALIAN
ADP-RIBOSYLARGININE HYDROLASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Jr., James J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sally J.
                                                                                                                                                                                                                                                                                                                                                                                 US/08/183,214
                                                                                                                                                                                                                                                                                                                                                                                                              Release #1.0, Version #1.25
                                          Score 38; Pred. No.
                                                                                                                                                                                                                                                  15280-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 38; DB 3;
Pred. No. 1.4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                           Mismatches
                          ув
1.7e+02;
7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 293;
                                                        Length 345;
                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

Search completed: July 6, 2001, 09:10:24 Job time: 190 sec THE PAGE BLANK (USPTO)

*?* 

٠٠

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
        42
41.5
41
41
                                                                                                                                          42.5
42
42
42
                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      July 6, 2001, 09:18:02 ; Search time 73.59 Seconds (without alignments)
16.562 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-437-912-9
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            219241 seqs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
        DВ
        KGBOH1
T33083
S34153
G71333
T494222
H69878
F05352
T51748
S21633
A84100
A86772
S73219
F11620
S71620
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KGHUHJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        219241
thimet oligopeptid hemoglobin V precu cell-division prot alpha subunit of r hypothetical proteribosomal protein probable transcrip monosaccharide transpondation protein probable transcrip monosaccharide transpondation rotein protein rich hypothetical protein pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 conserved hypothet probable integral mst101-1 proteal nprobable ribonucle RAD57 related protein k hypothetical prote
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen, HMW pre
kininogen, HMW II
kininogen, HMW I p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
```

The state of the s

## ALIGNMENTS

	· .	
<b>μ</b> . (ς <b>a</b>	A;Accession: AU1279 A;Molecule type: mRNA A;Residues: 1-389 <ohk> A;Cross-references: GB:K02566; NID:g177889 R;Cross-references: GB:K02566; NID:g177889 R;Takagaki, Y.; Kitamura, N.; Nakanishi, S. J. Biol. Chem. 260, 8601-8609, 1985 A;Title: Cloning and sequence analysis of cDNAs for human high molecular weight and l A;Reference number: A92544; MUID:85234582 A;Accession: A25276 A;Accession: A25276 A;Accession: A25276 A;Accession: A25276 A;Accession: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852 A;Accession: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852 R;Auerswald, E.A.; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I. FEBS Lett. 321, 93-97, 1993 A;Title: Cloning, expression and characterization of human kininogen domain 3. A;Residues: 'ANSM', 253-377 <aue> A;Nolecule type: mRNA A;Residues: 'ANSM', 253-377 <aue> A;Note: differences are due to known cloning artifacts R;Lottspeich, F; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl, W. Eur. J. Biochem. 152, 307-314, 1985 A;Title: The amino acid sequence of the light chain of human high-molecular-mass kini</aue></aue></ohk>	RESULT 1  KGHUH1  Kininogen, HMW precursor [validated] - human  N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen; prokininogen  N;Contains: bradykinin (kallidin I); HMW kininogen I; HMW kininogen II; low molecular  C;Species: Homo sapiens (man)  C;Date: 28-May-1986 #Sequence_revision 28-May-1986 #text_change 08-Dec-2000  C;Accession: A01279; A52376; S3242; A91153; A24871; A27899; A27699; A31905; A34030;  R;Ohkubo, I; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M.  Biochemistry 23, 5691-5697, 1984  A;Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide  A;Reference number: A90490; MUID:85122621

```
A;Title: Purification from human plasma of a A;Reference number: S68059; MUID:96033974 A;Accession: S68059 Protein A;Residues: 431-434 <STR>
R;Kitamura, N.; Kitagawa, H.; Fukushima, D.; J. Biol. Chem. 260, 8610-8617, 1985
                                                                                                                                                                                                                                                                                                                          A:Molecule type: protein
A:Residues: 264-359, 'N', 361-375 <LEN2>
R:Little, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A:Title: Human mast cell tryptase isoforms:
A:Reference number: S55239; MUID:95251593
A:Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Reference number: $14303; MUID:91192133 A; Accession: $14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: protein
A; Residues: 379-389, 'K', 390-407, 'Q', 409-644 <KEL2>
R; Mindrolu, T.; Carretero, O.A.; Proud, D.; Walz, D.;
R; Mindrolu, T.; Carretero, 152, 519-526, 1986
A; Title: Strüctural organization of the human A; Reference number: A92545; MUID: 85234583 A; Contents: annotation; gene organization
                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 450-452, X', 454, 'X', 456 <LIT>
R; Straczek, J; Maachi, F; le Nguyen, D.;
FEBS Lett. 373, 207-211, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Lenarcic, B.; Krasovec, M.; Ritonja, A
FEBS Lett. 280, 211-215, 1991
A;Title: Inactivation of human cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Kato, H.; Matsumura, Y.; Maeda, H.
FEBS Lett. 232, 252-254, 1988
A;Title: Isolation and identification of hydroxyproline analogues of bradykinin
A;Reference number: A61495; MUID:88211869
A;Accession: A61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein
A; Molecule type: protein
A; Residues: 1-19; 189-192; 310-314; 381-389
A; Residues: 1-19; 189-192; 310-314; 381-389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 381-399 (MAE)
R; Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A; Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin released
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
A; Residues: 380-389 <KAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Experimental source: urine A; Note: this peptide had Pro-383 modified A; Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein A; Residues: 381-389 < KAT2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: this peptide had A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 380-389 < KAT1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A; Accession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok, Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A;Title: Human cathepsin B and cysteine proteinase inhibitors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number: A31905; A; Accession: A31905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: A34030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A34030;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: Purification and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: A27699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lenarcic, B.;
BS Lett. 280,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Residues: 380-389 <SAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Residues: 380-389 <MIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title: A new kinin moiety
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           H.; Matsumura, Y.; Kato, H.
Chem. 263, 16051-16054, 1988
Purification and identification of
nce number: A31905; MUID:89034061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S02482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Y.; 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pro-383 modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tareine proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in human plass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MUID:88106632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ritonja, A.; Olafsson,
                                                                                                                                                                                                                                                     Nguyen, D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plasma kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <LEN1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to 4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and kininogen by human cathepsin
                                                                                                                                                                                                                                                     Becchi, M.;
                                                                                                                                                                                                                                                                                                                                                                        separation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [hydroxyprolyl(3)]bradykinin
                                                                                        Takagaki,
                                                                                                                                                                                                         tetrapeptide that potentiates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4-hydroxyproline
                                           kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scicli,
                                                                                        Y.; Miyata,
                                                                                                                                                                                                                                                     Heulin,
                                                                                                                                                                                                                                                                                                                                                                        and examination
                                           gene and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CPIs) in
                                                                                                                                                                                                                                                     M.H.; Nabet,
                                                                                        T.; Nakanishi,
                                           model for its evolut
                                                                                                                                                                                                                                                                                                                                                                        of substrate-spec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U
                                                                                                                                                                                                       insulin-like
                                                                                                                                                                                                                                                     ₽.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ascitic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human
                                                                                                                                                                                                                                                     Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   flu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          an
```

```
Fil-18/Jonain: Signal Sequence #Status experimental SIG>
Fil-18/Jonain: Signal Sequence #Status experimental SIG>
Fil9-379,390-544/Product: HMW kininogen II #Status experimental <MATI>
Fil9-379,390-544/Product: HMW kininogen II #Status experimental <MATI>
Fil9-379/Domain: HMW kininogen heavy chain #status experimental <HCH>
Fil9-379/Domain: cystatin homology <CYI>
Fil42-253/Domain: cystatin homology <CYY2>
Fil42-253/Domain: cystatin homology <CYY3>
Fil42-253/Domain: cystatin homology <CYY3>
Fil9-379/Product: lysyl-bradykinin (kallidin II) #status experimental <HCH>
Fil9-380/Product: lysyl-bradykinin (kallidin II) #status experimental <HCH>
Fil9-380/Product: bradykinin (kallidin I) #status experimental <HCH>
Fil9-380/Product: bradykinin (kallidin I) #status experimental <HCH>
Fil9-380/Product: low molecular weight growth promoting factor #status experimental fil9/Modified site: pyrrolidone carboxylic acid (GIn) (in mature form) #status experimental fil9/Modified site: carbohydrate (Asn) (covalent) #status absent fil69,205,294/Binding site: carbohydrate (Asn) (covalent) #status experimental fil69,205,294/Binding site: carbohydrate (Asn) (covalent) #status experimental fil9/Signal filed site: Abydroxyproline (Pro) (partial) #status experimental fil9/Signal filed site: Arg-Ser (kallikrein) #status experimental fil9/Signal filed site: Arg-Ser (kallikrein) #status experimental fil9/Signal filed site: Arg-Ser (kallikrein) #status experimental filed file
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Comment:
C; Comment:
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3 C;Superfamily: kininogen; cystatin homology C;Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: Structural features of plasma kinins and A; Reference number: A91455; MUID:90255622 A; Contents: annotation; bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C; Comment:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Gene: GDB: KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                xyproline residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Comment:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fed. Proc.
                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genetics:
506
                                                                           1 HKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bradykinin, released residue is present in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kininogen is a cysteine proteinase inhibitor, takes part in initiation of The glycine/histidine/lysine-rich region of HMW kininogen light chain is Bradykinin, released from kininogen by kallikrein, is a potent vasodilato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The HMW kininogen precursor and the LMW form are produced from
                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52-57, 1968
                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                          carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GDB:125256; OMIM:228960
                                                                                                                                                                                                  100
                                                                           16
                                                                                                                                                                                                      .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the kininogen
                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                              (Ser)
                                                                                                                                                          Score 98; DE
Pred. No. 8.4
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                              (covalent)
                                                                                                                                                                                                  8.4e-07;
                                                                                                                                                                                                                                              DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            prior to
                                                                                                                                                                                                                                          Length 644
                                                                                                                                                                                                                                                                                                                                                                          experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                release
                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            potent vasodilator
of bradykinin.
                                                                                                                                                          Gaps
                                                                                                                                                          0
```

A;Accession: A91923 A;Molecule type: protein A;Residues: 376-391 <KAT A; Title: Studies on the structure of bovine kininogen: A; Reference number: A91923; MUID:70180420 R; Kato, H.; Nagasawa, S.; Suzi J. Biochem. 67, 313-323, 1970 A;Accession: A01282 A;Molecule type: mRNA A;Residues: 1-619 <KIT> A;Cross-references: GB:V01492; Nature 305, 545-549, 1983 A;Title: A single gene for bovine high molecular A;Reference number: A93317; MUID:84014106 N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokininogen C;Speciles: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence\_revision 14-Nov-1983 #text\_change 22-Jun-1999 C;Accession: A01282; A91923; A91941; A91938; B29559 C;Ritiamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, R;Kitamura, M;Kitamura, M;Ki N;Alternate kininogen, HMW II precursor names: alpha-2-thiol proteinase inhibitor; preprokininogen bradykinin (kallidin); kininogen I; kininogen II; prokinin <KAT> Iwanaga, Suzuki, bovine GB:K01758; NID:g493; ki, T. s.; weight T.; Nawa, H.; Nakanishi, S. PIDN:CAA24736.1; cleavages and low molecular weight kini of disulfide PID: 9494

```
C/Superfamily: kininogen; Cystatin homology
C/Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; dupl
F/1-18/Domain: signal sequence #status predicted <SIG>
F/19-619/Product: HMW kininogen II #status predicted <MAT>
F/19-376/Product: HMW kininogen II heavy chain #status experimental <HCH>
F/19-130/Domain: cystatin homology <CYI>
F/14-1252/Domain: cystatin homology <CYI>
F/241-252/Domain: cystatin homology <CYI>
F/261-372/Domain: cystatin homology <CYI>
F/261-372/Domain: cystatin homology <CYI>
F/270-386/Product: lysyl-bradykinin (kallidin II) #status experimental <KBDY>
F/377-386/Product: bradykinin (kallidin II) #status experimental <CH>
F/378-386/Product: bradykinin (kallidin II) #status experimental <CH>
F/387-619/Product: bradykinin (kallidin II) #status experimental <CH>
F/387-619/Product: hMW kininogen II light chain #status experimental <CH>
F/387-619/Product: HMW kininogen II light chain #status experimental <CH>
F/387-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light chain #status experimental <CH>
F/389-619/Product: hMW kininogen II light ch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein
A; Residues: 456-496 < CHA2>
R; Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato,
J. Biol. Chem. 262, 2768-2779, 1987
A; Title: Bovine high molecular weight kininogen.
A; Reference number: A92627; MUID:87137530
A; Accession: B29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A:Note: article in Japanese
A:Note: article in Japanese
C:Comment: The HMW kininogen precursor is produced from the same gene as the LMW form to C:Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of the C:Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is important in the glycine/histidine/lysine-rich region of HMW kininogen light chain is noted to the cystem of the cyste
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F:47/Binding site: carbohydrate (Asn) (covalent) #status absent
F:87,168,169,204,280/Binding site: carbohydrate (Asn) (covalent) #status experimental
F:136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental
F:197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F:376-377/Cleavage site: Met-Lys (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: 398-Pro, 401-val, ...
R; Han, Y.N.; Komiya, M.; Iwa
R; Biochem. 77, 55-68, 1975
J. Biochem. 77, 65-68, 1975
                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Contents: annotation; bovine cleavage sites; bovers; Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S. Seikagaku 56, 808, 1984
A;Title: Disulfide bonds in bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Molecule type: protein
A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376
A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Studies on A; Reference number: A; Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Lottspeich, F.; Kellermann, J.; Henschen, Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                          380/Modified site: 4-hydroxyproline (Pro) #status predicted (386-387/Cleavage site: Arg-Ser (Kallikrein) #status experimental (396-407/Cleavage site: Arg-Ser (Kallikrein) #status experimental (396,400,404,510/Binding site: carbohydrate (Ser) (covalent) #status experimental (397,398,518,522,534,546,551,568/Binding site: carbohydrate (Thr) (covalent) #status experimental
                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Reference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Accession: A91941
482
                                                                                                                                                                                                                                                              Local
                                                                                              1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            398-Pro, 401-Val, and 455-Lys were also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Studies on the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Primary
HKNKGKNNGKHYDWRT 497
                                                                                                                                                                                                       l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1201-1222,
y structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the primary structure A91938; MUID:75170265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A91941;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1976
of bovine plasma high-molecular-weight kininogen. The MUID:76260155
                                                                                                                                                                                                                                                        .5%;
                                                                                                                                                                                                 Score 75; DB Pred. No. 0.00
                                                                                                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0f
                                                                                                                                                                                                                                                        DB 1;
0.0019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Η.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   high-molecular-weight kininogen.
                                                                                                                                                                                                                                                                                                     Length 619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hayashida, H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₩:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence, positions of
                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Miyata,
                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tiation of the 
chain is impo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T.;
                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Iwanaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Α'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       e
```

RESULT

#status

```
A; Note: article in Japanese
C; Comment: The HMW kininogen precursor is produced from the same gene as the LMW form C; Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of C; Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is i C; Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator xyproline residue is present in the kininogen prior to the release of bradykinin.
C; Superfamily: kininogen; cystatin homology
C; Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d F; 1-18 / Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                           F:19-621/Product: 'HMW prókininogen I *status predicted <MAT>
F;19-379/Product: HMW kininogen I heavy chain *status experimental <HCH>
F;19-379/Domain: cystatin homology <CY1>
F:141-252/Domain: cystatin homology <CY2>
F:263-374/Domain: cystatin homology <CY2>
F;263-374/Domain: cystatin homology <CY3>
F;379-388/Product: lysyl-bradykinin (kallidin II) *status experimental <MDY>
F;380-388/Product: bradykinin (kallidin I) *status experimental <MDY>
F;380-621/Product: HMW kininogen I light chain *status experimental <LCH>
E:417-488/Product: HMW kininogen I light chain *status experimental <LCH>
                                  F;87,168,169,204/Binding site: carbohydrate (Asn) (covalent) #status experimental F;136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental F;197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental F;378-379/Cleavage site: Met-Lys (kallikrein) #status experimental F;382/Modified site: 4-hydroxyproline (Pro) #status predicted F;388-389/Cleavage site: Arg-Sex (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Title: The amino acid sequence of the light chain of human high-molecular-mass A; Reference number: A91153; MUID: 86030270 A; Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokininogen C;Species: Bos primigenius taurus (callidin) (kallidin); kininogen II; prokininogen C;Species: Bos primigenius taurus (name in taurus); Species: Bos primigenius taurus (name in taurus); Species: Bos primigenius taurus (name in taurus); Species: Bos primigenius taurus (name in taurus); C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999 C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999 C;Accession: A01281; A91923; A91938; A29559 C;R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, Species: Angles (name in taurus); Nawa, H.; Nawa, H.; Nakanishi, Species: Angles (name in taurus); Nawa, H.; Nawa, H.; Nakanishi, Species: Angles (name in taurus); Nawa, H.; Na
                                                                                                                                                                                                                                                                                                                         F;417-488/Region: glycine/histidine/lysine-rich
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex
F;27-591,82-93,106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: Disulfide bonds in A; Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Sueyoshi, T.; Miyata, T.; Kato, H.;
Seikagaku 56, 808, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; MoLecule type: protein
A; Residues: '72,20-123,'I',125-127,'I',129-378
R; Lottspeich, F: Kellermann, J: Henschen, A.;
Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: A92627; A; Accession: A29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Studies on the primary structure of bovine high-molecular-weight kininogen A;Reference number: A91938; MUID:75170265 A;Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R; Han, Y.N.; Komiya, M
J. Biochem. 77, 55-68,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein A; Residues: 378-393 < KAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: A91923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: Studies on the stru
A; Reference number: A91923;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:V01491; GB:K01757; R;Kato, H.; Nagasawa, S.; Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-621 <KI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Reference number: A93317; A; Accession: A01281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: A single gene for bovine high molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kininogen, HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nagasawa, S.; Suzuki,
67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1-621 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Komiya, M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  structure of bovine 923; MUID:70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MUID:84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ·:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NID: 9491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A.; Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen: cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bovine
S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Η.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PIDN:CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid sequence, positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hayashida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         low molecular weight kini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H.; Miyata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of
experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PID: 9492
                                                                                                                                                                                                                                                                                                                         experi
de bond
```

#text\_change 21-Jan-2000

```
C; Geneti
A; Gene:
                                                                                                                                                                                                                                                                                                                                  R.Seeger, K.J.; Harris, D.; Bentley, S.D.; Parkhill, submitted to the EMBL Data Library, July 1999
A; Reference number: Z21567
A; Accession: T35064
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-275 < SEE>
                                                                                                        QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      probable integral membrane protein - Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Species: Streptomyces coelicolor C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 05-Nov-1999 C;Accession: T35064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Map position: 1
A;Introns: 52/1; 77/3
C;Superfamily: Alcaligenes eutrophus phosphoglycolate phosphatase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   conserved hypothetical protein SPAC7D4.05 - fission yeast (Schizosaccharomyces c;Species: Schizosaccharomyces pombe C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 17-Mar-2000 C;Accession: T39083 R;Gentles, S.; Churcher, C.M.; Wood, V.; Barrell, B.G.; Rajandream, M.A.
        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the EMBL Data A; Reference number: Z21826 A; Accession: T39083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
T39083
                                                                     밁
                                                                                                                                                                                                                                                                                                   A; Experimental source: strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental source: strain C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:AL096884; PIDN:CAB51427.1; GSPDB:GN00070; SCOEDB:SC4G6.04c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:Z99532; PIDN:CAB16722.2; GSPDB:GN00066; SPDB:SPAC7D4.05
A;Experimental source: strain 972h-; cosmid c7D4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-225 <G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;399,400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) (covalent) \#status F;498-499/Cleavage site: Arg-Thr (kallikrein) \#status experimental
                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                   Genetics:
Gene: SCOEDB:SC4G6.04c
                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gene: SPDB:SPAC7D4.05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                     222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              484 HKNKGKNNGKHYDWRT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                                                                            7 KNGKHNGW 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 HKNKGKKNGKHNGWKT
      6
                                                                   KNGKHNSW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HKNHGKKSGLNPHDWW 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HKNKGKKNG -- KHNGW 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1-225 <GEN>
                                                                                                                                                    Similarity
7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Churcher, C.M.; Wood, V.; Barrell, B.G.; Rajandream, M.A.
                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  76.5%;
75.0%;
                                                                                                                                                                       48.0%;
87.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Library, September 1997
                                                                                                                                                                                                                                                                                                   A3(2)
                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 47; DB Pred. No. 9.5; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 75;
Pred. No.
                                                                                                                                                                       Score 47;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                    Mismatches
                                                                                                                                                                       DB
11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0.0019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
9.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
                                                                                                                                                                                      Length 275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Barrell, B.G.; Rajandream, M.A.
                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pombe)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ex
                                                                                                                                                                                                                                RESULT
T49422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Fraser, C.M.; Norris, S.J.; Weinstock, G.M.; White, O.; Sutton, G.G.; Dodson, Tson, J.; Khalak, H.; Richardson, D.; Howell, J.K.; Chidambaram, M.; Utterback, they, L.; Weidman, J.; Smith, H.O.; Penter, J.C. Science 281, 375-388, 1998
A;Title: Complete genome sequence of Treponema pallidum, the syphilis spirochete
A;Status: preliminary A;Molecule type: DNA
                                         A; Reference number: 225022
A; Accession: T49422
                                                                                  R;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann, submitted to the Protein Sequence Database, May 2000
                                                                                                                                             RAD57 related protein [imported] - Neurospora N;Alternate names: protein B17C10.30 C;Species: Neurospora crassa C;Date: 02-Jun-2000 #sequence_revision 02-Jun-
                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Gene: TP0353
C;Superfamily: ribonuclease H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      probable ribonuclease H (rnhA) - syphilis spirochete
C;Species: Treponema pallidum subsp. pallidum (syphilis spirochete)
C;Date: 24-Jul-1998 #sequence_revision 24-Jul-1998 #text_change 22-Jun-1999
C;Accession: G71333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Gene: FlyBase:Dhyd/mst101
A;Cross-references: FlyBase:FBgn0011816
C;Superfamily: neurofilament triplet H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mst101-1 protein - fruit fly (Drosophila hydei) C;Speckes: Drosophila hydei C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 C;Accession: S34153
                                                                                                                              C; Accession: T49422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:AE001215; GB:AE000520; NID:g3322631; PIDN:AAC65340.1; PID:g332A;Experimental source: strain Nichols
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-169 <COL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A71250; A; Accession: G71333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references:
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-344 <NEE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A; Accession: S34153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            submitted to the EMBL Data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R; Neesen,
                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local s
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                       103 KHNGWKT 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302
                                                                                                                                                                                                                                                                                                                                                            10 KHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity les 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 NKGKKNGKHNGWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J.; Heinlein, U.A.O.; Buenemann,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DKGKKNGKKNDMK
                                                                                                                                                                                                                                                                                                                                                                                                 46.9%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S34153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL: X73480; NID: g313199; PID: g313200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequence of Treponema pallidum, 50; MUID:98332770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Library,
                                                                                                                                                                                                                                                                                                                                                                                                 %; Score 46; DB
%; Pred. No. 10;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          enemann, H.
, June 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                               02-Jun-2000 #text_change 02-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 47;
                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DΒ
```

the syphilis spirochete

**z** 0

2;

Length 344;

ω ••

Indels

0

Gaps

0

crassa

.. ..

Holland, R.;

Nyakatu

2

Length 169;

0;

Indels

0;

Gaps

```
A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maueel y, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portetelle Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon, A; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Serora akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiyama, T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K.; A;Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.
A;Title: The complete genome sequence of the Gram-positive bacterium Bacillus subtilis. A;Reference number: A69580; MUID:98044033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: H69878
C;Accession: H69878
R;Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, R;Kunst, F.; Ogasawara, N.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Carter, C.; Fron. S.; Brouillet, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, C.; Fron. S.; Capuano, C.; Carter, C.; Fron. S.; Capuano, C.; Capuano, C.; Capuano, C.; Fron. S.; Capuano, C.; Capuano, C.; Capuano, C.; Capuano, C.; Fron. S.; Capuano, C.; 
                                                                          C;Accession: T05352
C;Accession: T05352
R;Bevan, M.; Terryn, N.; Ardiles, W.; Buysshaert, C.; Dasseville, ewes, H.W.; Mayer, K.F.X.; Schueller, C.
                                                                                                                                                                                                                                        hypothetical protein F8B4.120 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 23-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Superfamily: Bacillus subtilis probable protein kinase yloP; C;Keywords: ATP; phosphotransferase; protein kinase F;9-269/Domain: protein kinase homology <KIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
"~+~hes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues: 1-516 <SCH>
A;Cross-references: EMBL:AL355926; GSPDB:GN00116; NCSP:B17C10.30
A;Experimental source: BAC clone B17C10; strain OR74A
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:Z99112; GB:AL009126; NID:g2633902; A;Experimental source: strain 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
A; Residues: 1-648 < KUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nature 390, 249-256, 1997

A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          probable protein kinase (EC 2.7.1.-) ylop - Bacillus subtilis C; Species: Bacillus subtilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Gene: NCSP:B17C10.30
A;Map position: 6
A; Reference number: A; Accession: T05352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Introns: 31/3
                                                                                                                                                                                                                                                                                                                                                                                     T05352
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Species: Bacillus subtilis; Species: Bacillus subtilis; Species: Bacillus subtilis; Species: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 16-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486 KGVGKKNGKEEGMK 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 KNKGKKNGKHNGW 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 KNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENKTKKNGKRKKW 329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                           Z15409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46.98;
64.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 46; DB Pred. No. 34; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ا
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIDN:CAB13450.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       loni, G.; Azevedo, V.; Ber
apuano, V.; Carter, N.M.;
J.; Fabret, C.; Ferrari,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                              R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                  De Clerck,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PID:g2633949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                              R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Berter
M.; Chc
ri, E.
                                                                                                                                                              De
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
S21633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
```

```
A; Map position: II
C; Superfamily: globin; glob
C; Keywords: chromoprotein;
F; 1-16/Domain: signal seque
                                                                                                                                                                                                                                                                                                 hemoglobin V precursor - midge (Chironomus thummi piger)
C;Species: Chironomus thummi piger
C;Date: 12-Nov-1999 #sequence_revision 12-Nov-1999 #text_change 03-Mar-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Description: (EC 3.4.24.15) [validated; C;Superfamily: oligoendopeptidase F C;Keywords: hydrolase; metalloproteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Characterization of PepB, a group B streptococcal oligopeptidase A;Reference number: Z25445; MUID:96333389
A;Accession: T51748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            thimet oligopeptidase (EC 3.4.24.15) PepB [validated] - Streptococcus agalactiae C;Species: Streptococcus agalactiae C;Species: Streptococcus agalactiae C;Date: 18-Aug-2000 #sequence_revision 18-Aug-2000 #text_change 15-Sep-2000 C;Accession: T51748
                                                                                A; Gene: HbV
                                                                                                   C; Genetics:
                                                                                                                       A; Cross-references: EMBL: X56271; NID: g7069;
                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-163 <HAN>
                                                                                                                                                                                   A; Accession:
                                                                                                                                                                                                    submitted to the EMBL Data Library, September 1990 A; Description: Complete nucleotide sequence of a hA; Reference number: S21627
                                                                                                                                                                                                                                                                R;Hankeln,
                                                                                                                                                                                                                                                                                  C; Accession: S21633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Gene: pepB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Cross-references: EMBL: U49821; PIDN: AAC44215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Residues: 1-601 <LIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Lin, B.; Averett, W.F.; Novak, J.; Chatham, W.W.; Hollingshead, S.K.; Coligan, Infect. Immun. 64, 3401-3406, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Superfamily: cyclophilin homology F; 6-162/Domain: cyclophilin homolog:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Note: F8B4.120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Map position: 4
A; Introns: 26/3; 45/1; 74/3; 83/1; 122/2; 165/1; 270/2; 307/1; 731/2; 754/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Experimental source: cultivar Columbia; BAC clone F8B4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Cross-references: EMBL: AL034567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-857 <BEV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                           349 HVNKGKRSGAYSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         168 KSDGKKNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 HKNKGKKNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 KNKGKKNGKH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
8; Conserv
                                                                                                                                                                               S21633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 7; Conser
                                                                                                                                                                                                                                                                Rozynek,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cyclophilin homology <CYP>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         177
  ; globin homology
tein; heme; iron;
sequence #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          translated
                                                                                                                                                                                                                                                                .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46.9%;
80.0%;
                                                                                                                                                                                                                                                              Schmidt,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          from
                                                                                                                                                                                                                                                                E.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
  metalloprotein; oxygen
predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MUID:96333389]; hydrolyzes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
45;
                                                                                                                         PIDN:CAA39718.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                      hemoglobin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                        gene
                                                                                                                     PID: 97076
                                                                                                                                                                                                                        cluster from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a variety
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
```

mid

```
A; Experimental:
C; Genetics:
A; Gene: ftsX
                                                                                                                                                                           QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:x89599; NID:g908852; PIDN:CAA61758.1; PID:g908853 C;Superfamily: cyclic nucleotide-gated channel; cAMP receptor protein cyclic nucleotide F;431-555/Domain: cAMP receptor protein cyclic nucleotide-binding domain homology <CAP>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         alpha subunit of rod photoreceptor CNG-channel - chicken C; Species: Gallus gallus (chicken) C; Date: 13-Sep-1996 *sequence_revision 13-Sep-1996 *text_change 13-Aug-1999 C; Date: 13-Sep-1996 *sequence_revision 13-Sep-1996 *text_change 13-Aug-1999 C; Date: 13-Sep-1996 *sequence_revision 13-Sep-1996 *sequence_r
                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-645 <BOND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Rod and cone photoreceptor cells express distinct genes for cGMP-gated channel A;Reference number: I50630; MUID:93264082 A;Accession: I50680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Bonigk, W.; Altenhofen, W.; Muller, F.; Dose, A.; Illing, M.; Molday, R.S.; Kaupp, U Neuron 10, 865-877, 1993
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Accession: I50680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Takami, H.; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Hiro Nucleic Acids Res. 28, 4317-4331, 2000
A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and A;Reference number: A83650; MUID:20263314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cell-division protein ftsX [imported] - Bacillus halodurans (strain C-125) C;Species: Bacillus halodurans C;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 01-Dec-2000 C;Accession: A84100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F;17-163/Product: hemoglobin V #status predicted <MAT>
F;19-162/Domain: globin homology <GLB>
F;76/Binding site: oxygen (His) (distal axial ligand) #status predicted
F;711/Binding site: heme iron (His) (proximal axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:AP001519; GB:BA000004; NID:g10176109; PIDN:BAB07320.1; GSPDB:GN0(A;Experimental source: strain C-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-298 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A; Accession: A84100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      111 HKNRGITQGQFNEFKT 126
                                                                                                                                                                                                                                                   Local Similarity
nes 8; Conserv
                                                                                                      90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
nes 8; Conserv
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                               1 HKNKGKKNGK 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 HKNKGKKNGKHNGWKT 16
                                                                                                          HKNKDKKKGK 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HVREGTKNLGRNGWMT 24
                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                         44.9%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44.9%;
                                                                                                                                                                                                                                               Score 44; DB Pred. No. 66; 0; Mismatches
                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 44; DB Pred. No. 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
. 34;
                                                                                                                                                                                                                                                                          66;
Bd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 163
                                                                                                                                                                                                                                                                                                                    Length 645;
                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

Search completed: July Job time: 649 sec

δ

2001,

09:18:03

```
QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein yljD [imported] - Lactococcus lactis subsp. lactis (strain c;Species: Lactococcus lactis subsp. lactis (Strain c;Species: Lactococcus lactis subsp. lactis C;Date: 23-Mar-2001 #sequence_revision 23-Mar-2001 #text_change 23-Mar-2001 C;Accession: A86772 R;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Weissenbach, JR;Bolotin, A.; Wincker, P.; Weissenbach, Mauger, R.; Weissenbach, Mauger, R.
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:AE005176; NID:g12724143; PIDN:AAK05275.1; GSPDB:GN00146
A;Experimental source: strain IL1403
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-81 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: A86625
A; Accession: A86772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome Res. in press, 2001 A;Title: The complete genome sequence of the lactic acid bacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: yljD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary
                                                                                                                                                                                                                        Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                        Local Similarity
nes 8; Conserv
35
                                                      2 KNKGKKNGKHN 12
KKNGKKNMKHN 45
                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                               43.98;
72.78;
                                                                                                                                                                                                                                                                               Score 43;
Pred. No.
                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                   DB
15;
                                                                                                                                                                                                                                                                                                                                     2:
                                                                                                                                                                                                                  ω
··
                                                                                                                                                                                                                                                                                                                                     Length 81;
                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       딛
```

```
Minimum DB :
Maximum DB :
                                                                                                                                                                                                                                                 Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                             Searched:
   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                 Score
                                                                                                                                                           98
75
75
47
47
44
44
44
43
43
                                                                                                                                                                                                                                                                                                                                                         seq
   length: 0
length: 2000000000
                                                                                                                                                                                                                                                Query
Match
                                                                                                                                                                                         100.0
76.5
76.5
48.0
46.9
45.9
  July 6, 2001, 09:26:40 ; Search time 37.59 Seconds (without alignments) 14.581 Million cell updates/sec
                                                                                                                                                                                                                                                                                                              SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                            93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-437-912-9
98
                                                                                                                                                                                                                                                                                                                                                                                                                                 1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                Length DB
  KNG_HUMAN
KNH1_BOVIN
KNH1_BOVIN
MST1_DROHY
MST1_DROHY
RNH_TREPA
PEPB_STRAG
GLBV_CHITP
CNG3_CHICK
RR5_PORPU
                                                                                                          YDVB_SCHPO
IGA_NEIGO
GARP_PLAFF
PTH_HELPJ
PEPF_BACSU
MUTS_THEMA
TOPL_SCHPO
INSR_MOUSE
INSR_HUMAN
 SYT1_CHICK
SY61_DISOM
TOP1_XENLA
TOP1_BUCAI
                              SYT1_BOVIN
                                          RNHL_SCHPO
SYT1_MOUSE
SYT1_RAT
                                                                              RL23_HAEIN
RK23_ODOSI
SKGR_XENLA
                                                                RL2_AQUAE
YAQ9_SCHPO
                                                                                                    INSR_RAT
                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                              93435
 P44361
P49559
P13673
O66434
Q10108
Q10236
P4609
P21709
P48018
P21579
P475195
P475195
P4757371
                                                                                                                 Q08695
Q83372
Q53772
Q5378
P51298
Q90980
P51298
Q90980
P13816
Q9zjc3
Q9zjc3
Q9zjc3
P14920
P17799
P17799
                                                                                                   P06213
P15127
                                                                                                                                                                                                                   P01042
P01045
P01044
                                                                                                                                                                                                                                                Description
7 rattus norv
8 bos taurus
9 homo sapien
1 gallus gall
5 discopyge o
2 xenopus lae
1 buchnera ap
                                                 3 xenopus lae
4 aquifex aeo
8 schizosacch
6 schizosacch
6 mus musculu
                                                                                                  6 thermotoga
9 schizosacch
8 mus musculu
3 homo sapien
rattus norv
                                                                                                                                                                 5 drosophila
2 treponema p
8 streptococc
3 chironomus
0 gallus gall
8 porphyra pu
9 schizosacch
                                                                                                                                                                                                                   homo sapien
bos taurus
bos taurus
                                                                                     haemophilus
odontella s
                                                                                                                                                    neisseria g
plasmodium
                                                                                                                                      helicobacte
bacillus su
```

45	44	43	42	41	40	39	38	37	36	35	34
5	39	39	39	39	39	39	39	39	40	40	40
39.3	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	40.8	40.8	40.8
606	1240	1226	874	789	491	420	330	210	3255	3255	1203
<b>⊢</b>	μ.	1	_	μ,	Н	ш		1	1	ب	┗.
WDR1_HUMAN	YNJ1_YEAST	YCS3_YEAST	POL1_HUMAN	ACOX_YEAST	NMT_CRYNE	DCDA_ECOLI	SYFA_CAMJE	YEQ9_YEAST	POLG_LMVE	POLG_LMV0	SDC1_CAEEL
	P53935 saccharomyc	_	-	P39533 saccharomyc			Q9pp34 campylobact	P40052 saccharomyc	P89876 1 genome po	P31999 l genome po	P24349 caenorhabdi

## ALIGNMENTS

```
TTTTT WAX ARREST RESTRICTED TO THE RESTRICTED TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HAM-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININGEN INDICED REFERRALIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROWBIN-AND PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SHOWTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIGRESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION OF NOCICEPTORS (4E) TO VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA BRADYKININ ACTION, (5) LMW-KININOGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMW-KININOGEN IS IN CONTRAST TO HMM-KININOGEN NOT INVOLVED IN BLOOD
                                                                                                               Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Repeat;
                                                                                                                                                                                                                                                                           PIR;
PIR;
PIR;
PIR;
PIR;
                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         use by non-profit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                      CHAIN
                                          CHAIN
                                                        Alternative SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El the European Bioinformatics Institute. There are no resti
                                                                                                                                                                                                                                    SWISS-2DPAGE;
MIM; 228960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seikagaku
                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                  [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLOTTING.
SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
TISSUB SPECIFICITY: PLASMA.
TISSUB SPECIFICITY: PLASMA.
FIRSUB SPECIFICITY: PLASMA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PTM: BRADYKININ IS RELEASED FROM KININOGEN SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAII
                                                                                                                                                                                                                                                                         A01280;
B25276;
S02482;
                                                                                                                                                                                                                                                                                                                                 A01279; KGHUH1.
A25276; A25276.
                                                                                                                                                                                                                                                                                                                                                                      M11437
M11521
M11522
M11523
M11523
M11524
M11525
M11528
M11528
M11528
M11528
M11523
M11523
M11523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K02566;
                                                                                                                                                                                              IPR000010; -. IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56:808-808(1984).
                                                      splicing.
                                                                                               Blood coagulation;
                                                                                                                                                                                                                                                                           B25276
S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; AAB59550.1;
; AAB59551.1;
; AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB59550.1;
AAB59550.1;
AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB59551.1;
AAB59551.1;
AAB59551.1;
AAB59551.1;
                                                                                                                                                                                                                                                                                                                 KGHUL1.
                                                                                                                                                                                                                                                                                                                                                                                              AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                AAB59551
                                                                                                                                                                                                                                                        P01043; HUMAN
                                                                                                                                                                                                                                                                                                                                                                          AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAA35497.1;
544
380
389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOINED.
                                                                                                                                                                                                                                                                                                                                                                        JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOINED
BRADYKININ
                  KININOGEN.
                                                                                                             Thiol protease
                                                                                               Inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (SHOWN HERE) AND LMW;
                                                                                             response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Usage
                                                                                                                 inhibitor; Vasodilator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ВУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ру
                                                                                               Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
멍
                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                   Query Match
Best Local S
Matches 16
                                                                                                                   KNH2_BOVIN STAN
P01045;
21-JUL-1986 (Rel. (
21-JUL-1986 (Rel. (
01-OCT-2000 (Rel. (
KININOGEN, HMW II I
                                                                                                                                                             LT 2
_BOVIN
                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                           DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID
                                 weight
                                                                                                                                                                                                                                                     CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
DOMAIN
DOMAIN
Sueyoshi T., Miyata T.,
                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
Bovidae; Bovinae; Bo
                                                                                                                                                                                                                                                                                                                                                                                                                                                REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
DOMAIN
       MEDLINE=87137530;
                          Kitamura N., Takagaki Y.,
"A single gene for bovine
weight kininogens.";
Nature 305:545-549(1983).
                                                      SEQUENCE FROM N.A. MEDLINE=84014106; PubMed=6571699;
                                                                                                      Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                         MOD_RES
              SEQUENCE OF 19-376.
                                                                           NCBI_TaxID=9913;
                                                                                                             BRADYKININ]
                                                                                                                                                                                                                                                                  VARSPLIC
                                                                                                                                                                                                                                                                                VARSPLIC
                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                        506
                                                                                                                                                                                                     1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                        HKNKGKKNGKHNGWKT 521
                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                     644
                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                      STANDARD;
      PubMed=3546295;
                                                                                   Bos.
                                                                                                                         01, Created)
01, Last sequence update)
40, Last annotation updat
                                                                                                                    PRECURSOR
                                                                                                                                                                                                                                                                               Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                     71945 MW;
                                                                                                                                                                                                                         100.0%;
Hashimoto
                                        Furuto S., Tanaka T., high molecular weight
                                                                                                                    THIOL
                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                   N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                           VSPPHTSMAPAQDEERDSGKEQGHTR -
PPKAGAEPASEREVS (IN ISOFORM
MISSING (IN ISOFORM LMW).
T -> I (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KININOGEN LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
HIS-RICH (ASSOCIATED WITH CLOTTING
                                                                                                                                                                                                                  Score 98; DB 1; 1
Pred. No. 7.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                   PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                     -> I (IN REF. 1).
3132B4CBAF8FBB7E CRC64;
Z
.
                                                                                                                    ion update)
PROTEINASE
                                                                                                                                                       619
                                                                                                                                                                                                                                                                                                                                                   (GLCNAC.
(GLCNAC.
(GLCNAC.
Kato H., Hayashida H.,
                                                                                                                                                      A
                                                                                                                   INHIBITOR) (CONTAINS:
                                                                                                                                                                                                                                                                                                                                                    · .
                                          and
                                                                                                                                                                                                                                Length 644;
                                               Nawa
                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                          low
                                                                                                                                                                                                                                                                                                                                                                                                                                           ACID
                                          molecular
                                               Nakanishi
                                                                                         Bovoidea;
                                                                                                                                                                                                                                                                          LMW)
                                                                                                                                                                                                                                                                                SHLRSCEYKGR
                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                   Gaps
                                                s
::
```

Iwanaga S.;

```
EMBL; V01492; CAA24736.1; -
EMBL; V01492; CAA24737.1; A
PIR; A01282; KGB0H2.
PIR; B39559; B29559;
HSSP; P04129; LAFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HMW-KININOGEN LAYS AN INHIBITORS OF THIOL PROTEASES; (2)
HMW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRINGESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIDOROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ
ACCTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Han Y.N., Komiya M., Iwanaga S., Suzuki T.; "Studies on the primary structure of bovine high-molecular-weight kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Blochem. 77:55-68(1975).
                                                                                                                                                             InterPro; IPR000010; -.
InterPro; IPR002395; -.
Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Han Y.N., Kato H., Iwanaga S., Suzuki T.;
"Primary structure of bovine plasma high-molecular-weight kininogen.
The amino acid sequence of a glycopeptide portion (fragment 1)
following the C-terminus of the bradykinin moiety.";
J. Blochem. 79:1201-1222(1976).
                                          Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-70180420; PubMed-4986212;
Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen: cleavages of disulfide bonds and of methionyl bonds in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 456-496 MEDLINE=75170265; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=76260155; PubMed=956151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 387-455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 376-391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 positions of carbohydrate chains and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bovine high molecular weight kininogen. The amino acid sequence, positions of carbohydrate chains and disulfide bridges in the heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTION).
SUBCELLULAR LOCATION: EXTRACELLULAR.
SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HMW II AND LMW II KININOGEN PRECURSORS
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
PRODUCED FROM THE SAME FROM THE MRNA
PRODUCED FROM THE MRNA
PRODUCED FROM THE MRNA
PRODUCED FROM THE MRNA
PRODUCED FROM THE PRODUCED FROM THE MRNA
PRODUCED FROM THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PTM: BRADYKININ IS RELEASED FROM KININGGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TO RESIDUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          portion."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67:313-323(1970).
response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  398.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              262:2768-2779(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=1169237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALT_SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BY PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        collaboration
```

REFERENCE OF THE PROCESS OF THE PROC

```
KNHLLB AC POIGA AC PO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                               KNH1_BOVIN STAN

P01044;

21-JUL-1986 (Rel. 0

21-JUL-1996 (Rel. 0

01-JUN-1994 (Rel. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
VARIANT
VARIANT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
CARBOHYD
                                                                                                                                                              weight kininogens.";
Nature 305:545-549(1983).
[2]
                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE=84014106; PubMed=6571699;
Kitamura N., Takagaki Y., Furuto S., Tanaka T.,
"A single gene for bovine high molecular weight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
CHAIN
                                                                        "Bovine high molecular weight kininogen. positions of carbohydrate chains and dis
                                                                                                                                  SEQUENCE OF 19-378. MEDLINE-87137530; P
                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                          Bos taurus
                                                                                                                                                                                                                                                                                                                                                         BRADYKININ]
                                                                                                                                                                                                                                                                                                                                                                       KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
SEQUENCE OF 378-393
MEDLINE=70180420; Po
                                                                                                                      Sueyoshi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                       Miyata T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 HKNKGKKNGKHNGWKT 16
                                                       portion."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                     87137530; PubMed=3546295; T., Miyata T., Hashimoto
                                                                                                                                                                                                                                                                                                 Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                       MMH
                                                                                                                                                                                                                                                                                                                                          (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                           . 01, Created)
. 01, Last sequence update)
. 29, Last annotation update)
precursor (THIOL PROTEINASE
 PubMed=4986212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chordata; Craniata; Vertebra
Cetartiodactyla; Ruminantia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76.5%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ϋ́Ε.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 75;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LIGHT CHAIN.
CYSTATIN-LIKE
CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       # 17 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC
N-LINKED (GLCNAC...).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OR 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -> P.
-> V.
-> K.
F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                   z
                                                                         disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (GLCNAC.)
(GLCNAC.)
(GLCNAC.
                                                                                                                    Kato H., Hayashida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
. 0.00025;
                                                                                                                                                                                                                                                                                                             Vertebrata; Eutel
minantia; Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MMH
                                                                                       The
                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Η
                                                                                         amino
                                                                                                                                                                                                                                                                                                                                                                       INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 619
                                                                         bridges
                                                                                                                                                                                                          Nawa H., Nakanish
and low molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .) (PARTIAL).
                                                                                       acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACID
                                                                         in the
                                                                                         sequence,
                                                                                                                                                                                                                                                                                                              Bovoidea
                                                                                                                                                                                                                          Nakanishi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                           heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
```

```
CARBOHYD
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                          CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                          PEPTIDE
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Han Y.N., Komiya M., Iwanaga S., Suzuki T.; "Studies on the primary structure of bovine high-molecular-weight "innogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HMW-KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
HMW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OF DETIMALLY REKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMEIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4EI) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ
ACCION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                     MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00031; cystatin; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR; A01281; KGBOH1.
PIR; A29559; A29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; V01491; CAA24735.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 458-498.
MEDLINE=75170265; Po
                                                                                                                                                                                                                                                                                                                                                                                                                                                       [nflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000010; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Studies on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ALTERNATIVE PRODUCTS: HMW I AND LMW I KININOGEN PRECURSORS ARE PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP TO DESTRUE ACO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBCELLULAR LOCATION: EXTRACELLULAR. ALTERNATIVE PRODUCTS: HMW I AND LMW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TO RESIDUE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            f methionyl bonds in 67:313-323(1970).
  19
380
389
19
136
258
258
258
19
168
168
106
106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the structure of
                                                                                                                                                                                                                                                                                                                                                                                                                                                     response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=1169237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Signar
                                                                                                                                                                                                                     CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC
                                                                                             N-LINKED (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bovine kininogen: cleavages of disulfide in kininogen-II.";
                                                                                                                                                                      PARTIAL.
                                                                                                                                                                                                N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                             LIGHT CHAIN.
                                                                                                                                                                                                                                                                                                                                                    BRADYKININ.
                                                                                                                                                                                                                                                                                                                                                                            HEAVY CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                PROBABLE
                                                                                                                     .) (PARTIAL).
                                                                                                                                                                                                                          ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    way
```

В δÃ

302

DKGKKNGKKNDMK 314

3 NKGKKNGKHNGWK

15

Conservative

Mismatches

Indels

0;

Gaps

0

```
RESULT 4
MST1_DROHY
ID MST1_DROHY
AC Q08695;
                                                                                                                       SOFT REPRESENTATION OF THE PROPERTY OF THE PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTT
Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
DISULFID
DISULFID
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The prosophila hyde; gene Dhmst101(1) encodes a testis-specific, repetitive, axoneme-associated protein with differential abundance Y chromosomal deletion mutant files.";

Dev. Biol. 162:414-425(1994).

1: FUNCTION: POSSIBLE STRUCTURAL ROLE IN THE SPERM TAIL. IT IS ASSOCIATED WITH AXONEMAL STRUCTURES.

-: SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                 use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                              the European Bioinformatics Institute. There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2000
                                                                                                                                                                                                              FlyBase;
                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- DOMAIN: THE PREDOMINANT STRUCTURE IS ALPHA-HELICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=94200512; PubMed=8150205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Testis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MST101(1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AXONEME - ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-FEB-1995
                                                                                                                                                                                                                                      PIR; S34153; S34153.
HSSP; P01032; 1C5A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- TISSUE SPECIFICITY: TESTIS. LOCATED IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neesen J., Buenemann H., Heinlein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        484 HKNKGKNNGKHYDWRT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SPERMATID BUNDLES
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through a ceen the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                              ; Repeat; M
N 58
                                                                                                                                                                                                                                                                                        X73480; CAA51875.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
12; Conser
                      Similarity
                                                                                                                                                                 FBgn0011816; Dhyd\mst101(1).
epeat; Multigene family.
58 337 19 x 16
                                                                                                                    344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hydei (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    205
228
263
327
327
350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 31, Created)
(Rel. 31, Last sequence update)
(Rel. 40, Last annotation update)
CIATED PROTEIN MST101(1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            217
247
266
339
369
                                                                                                                    37793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND CHARACTERIZATION
                      48.0%;
69.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76.5%;
                                                                                                                    MW;
                      Score 47;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 75; DB
Pred. No. 0.00
1; Mismatches
                                                                                                                                        19 X 16 AA APPROXIMATE TANDEM REPEATS K-K-C-X-E-X-A-[KQ]-K-X-X-E-X-A-X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      D16850BEFE3C55CD CRC64;
                                                                                                                    24C65D2510387E2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   344 AA
                                                                                                                                                                                                                                                                                                                                                           noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
. 0.00025;
                           ω
                      DB 1;
3.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPERMATOCYTES
                                          Length 344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BETWEEN STRAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                              a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                            outstation
                                                                                                                                                                                                                                                                                                                                                                                                             in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                 Q.
                                                                                                                                                                                                                                                                                                                                                                                                             ņo
                                                                                                                                                                                                                                                                                                                                                                                                                                      on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                                                                                                                                                                                                                          way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
PEPB_STRAG
ID PEPB_S
AC Q53778
DT 15-JUL
DT 15-JUL
DT 15-JUL
                                                                                                                                                                                                                                                        RESULT 5
                                                                                    RESULT
                                                                                                                            B
                                                                                                                                                     QΥ
                                                                                                                                                                                    Matches
                                                                                                                                                                                               Query Match
Best Local Similarity
PEPB_STRAG
Q53778;
15-JUL-1999
15-JUL-1999
15-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JU-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
RIBONUCLEASE H (EC 3.1.26.4) (RNASE H).
TROPOSSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RNH_TREPA
083372;
                                                                                                                                                                                                                                                       METAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-9832770; PubMed-9665876;

Fraser C.M., Norris S.J., Weinstock G.M., White O., Sutton G.G.,
Dodson R., Gwinn M., Hickey E.K., Clayton R., Ketchum K.A.,
Sodergren E., Hardham J.M., McLeod M.P., Salzberg S., Peterson J.,
Khalak H., Richardson D., Howell J.K., Chidambaram M., Utterback T.,
McDonald L., Artiach P., Bowman C., Cotton M.D., Fujii C., Garland S.,
Hatch B., Horst K., Roberts K., Sandusky M., Weidman J., Smith H.O.,
                                                                                                                                                                                                                                                                                    METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- FUNCTION: THIS ENZYME IS AN ENDONUCLEASE THE
RNA-DNA HYBRIDS SPECIFICALLY (BY SIMILARITY)
-!- CATALYTIC ACTIVITY: ENDONUCLEOLYTIC CLEAVAGE
                                                                                                                                                                                                                                                                                                               METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Complete genome sequence spirochete.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. STRAIN=NICHOLS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Treponema pallidum.
Bacteria; Spirochaetales; Spirochaetaceae; Treponema
                                                                                                                                                                                                                                                                                                                           Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AE001215; AAC65340.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 281:375-388(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=160;
                                                                                                                                                                                                                                                                                                                                                        nterPro;
                                                                                                                            103 KHNGWKT 109
                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       u
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: BELONGS TO THE RNASE H FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MONOESTER.

COFACTOR: REQUIRES MAGNESIUM FOR ACTIVITY (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBUNIT: MONOMER (BY SIMILARITY)
                                                                                                                                                        KHNGWKT 16
                                                                                                                                                                                                                                                                                                                                         PF00075; rnaseH;
                                                                                                                                                                                                                                                                                                                                                                     TP0353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                     Nuclease; Endonuclease; Magnesium.

12 12 MAGNESIUM (BY SIMILARITY).
63 63 MAGNESIUM (BY SIMILARITY).
87 87 MAGNESIUM (BY SIMILARITY).
151 151 MAGNESIUM (BY SIMILARITY).
169 AA; 18184 MW; 164311053632B047 CRC64;
                                                                                                                                                                                                                                                                                                                                                     IPR002156; -.
                                                                                                                                                                                                                                                    151
169
  (Rel.
(Rel.
(Rel.
                                                                                                                                                                                    Conservative
                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
38, Created)
38, Last sequence update)
38, Last annotation update)
                                                                                                                                                                                               46.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of Treponema
                                                                                                                                                                                  0;
                                                                                                                                                                                               Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                    Mismatches
                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pallidum,
                                                                                                                                                                                                 DB 1;
2.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLEAVAGE
                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THAT DEGRADES THE RNA
                                                                                                                                                                                 0;
                                                                                                                                                                                                            Length 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the syphilis
                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5'-PHOSPHO
                                                                                                                                                                                 0;
                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OF.
                                                                                                                                                                                 0;
```

```
ID ACCOMENTATION OF THE REPORT OF THE REPORT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GLBV_CHITP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                AV_CHITP SIA.....

P29243;
T 01-DEC-1992 (Rel. 24, Created)
T 01-DEC-1992 (Rel. 24, Last sequence update)

O1-NOV-1997 (Rel. 35, Last annotation update)

T 01-NOV-1997 (Pel. 35, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lin B., Averett W.F., Novak J., Chatham W.W., Hollingshead S.K., Coligan J.E., Egan M.L., Pritchard D.G.;
Coligan J.E., Egan M.L., Pritchard D.G.;
"Characterization of PepB, a group B streptococcal oligopeptidase.";
Infect. Immun. 64:3401-3406(1996).

-i. FUNCTION: HAS OLIGOPEPTIDASE ACTIVITY AND DEGRADES A VARIETY OF SWALL BIOACTIVE PEPTIDES, INCLUDING BRADYKININ, NEUROTENSIN, AND PEPTIDE FRAGMENTS OF SUBSTANCE P AND ADRENOCORTICOTROPIN. ALSO PEPTIDE FRAGMENTS OF SUBSTANCE P. AND ADRENOCORTICOTROPIN. ALSO HYDROLYZES THE SYNTHETIC COLLAGEN-LIKE SUBSTRATE N-(3-[2-PROYLL]ACRYLOYL)-LEU-GLY-PRO-ALA (FALGPA).

-i. SUBCELLULAR LOCATION: CYTOPLASMIC.
-i. SUBCELLULAR LOCATION: OF PEPTIDASE FAMILY M3 (ZINC METALLOPROTEASE ALSO KNOWN AS THE THIMET OLIGOPEPTIDASE SUBFAMILY.
                                                                                                                                 Pterygota; Neoptera; Endopte: Chironomoidea; Chironomidae;

      Metalloprotease; Hydrolase; Zinc

      METAL
      386
      386
      ZIN

      ACT_SITE
      387
      387
      BY

      METAL
      390
      ZIN

      METAL
      393
      393
      ZIN

      METAL
      393
      393
      ZIN

      SEQUENCE
      601
      AA;
      69590
      MW;
      EI

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPB
                                                                                                     NCBI_TaxID=7156;
                                                                                                                                                                                     Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U49821; AA
MEROPS; M03.008;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an
                           Hankeln T.,
                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96333389; PubMed=8757883;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=3502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Streptococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Firmicutes; Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptococcus agalactiae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GROUP B OLIGOPEPTIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=1311;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HKNKGKKNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HVNKGKRSGAYSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PF01432; Peptidase_M3; 1.
FE; PS00142; ZINC_PROTEASE; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 53.17; Conservative
R., Rozynek F
1 (SEP-1990)
                                                                                                     thummi piger (Midge).
Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Neoptera; Endopterygota; Diptera; Nematocera;
Neoptera; Endopterygota; Diptera; Chironomus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR001567;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR000130; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAC44215.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
  )
to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEPB
Schmidt E.R.,
the EMBL/GenRa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ZINC (CATALYTIC) (
BY SIMILARITY.
ZINC (CATALYTIC) (
ZINC (CATALYTIC) (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EE524998D30B0B8F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3.4.24.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            45;
                           Broecker M.
                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
  databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BY SIMILARITY)
(BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METALLOPROTEASE);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

Usage

bу

and

for commercial

```
RESULT 8
CNG3_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 8
                    the
                                                         This
                                                                                                                                                                                                                           Neuron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1997 (Rel. 35, Last sequence up
01-NOV-1997 (Rel. 35, Last annotation
CYCLIC NUCLEOTIDE GATED CHANNEL, ROD F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1997 (Rel.
01-NOV-1997 (Rel.
01-NOV-1997 (Rel.
                                        between
                                                                                                                                                                                                                                                            "Rod and cone photoreceptor cells express distinct genes
cGMP-gated channels.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                        (CNG CHANNEL 3) (CNG-3) (CNG3). Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; x56271; CAA39718.1;
PIR; S21633; S21633.
HSSP; P02229; 1ECO.
                                                                                                                                                                                                                                                                                            Boenigk W., Altenhofen W., Mueller F., Dose A., Illing M., Molday R.S., Kaupp U.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      use by non-profit institumodified and this statement
                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=93264082; PubMed=7684234;
                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                      Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PROUBLE; ERYTHCRU PROSITE; PS01033; GLOBIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00042; globin; PRINTS; PR00611; ERYTHC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR000971; -.
InterPro; IPR002336; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HKNKGKKNGKHNGWKT 16
                      European Bioinformatics Institute.
                                                                                                                                                           FUNCTION: VISUAL SIGNAL TRANSDUCTION IS MEDIATED BY A G-PROTEIN COUPLED CASCADE USING CGMP AS SECOND MESSENGER. THIS PROTEIN CAN BE ACTIVATED BY CYCLIC GMP WHICH LEADS TO A OPENING OF THE CATION CHANNEL AND THEREBY CAUSING A DEPOLARIZATION OF ROD
                                                                                                             SUBCELLULAR LOCATION:
SIMILARITY: BELONGS TO
                SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                    PHOTORECEPTORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MISCELLANEOUS: THERE ARE GLOBIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  _CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HKNRGITQGQFNEFKT 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oxygen transport; Respiratory protein;
                                                                                                                                                                                                                                         10:865-877(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          l Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                    Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
a; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  163 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Swiss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entry
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ERYTHCRUORIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         35, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163
76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rmatics Institute. There are no rest institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               is
                                                                                                               TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         copyright. It is produced through tute of Bioinformatics and the EN
                                                                                                                                INTEGRAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , WM
                                                                                                               THE CYCLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IRON (HEME DISTAL LIGAND)
(BY SIMILARITY).
IRON (HEME PROXIMAL LIGAND)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AT LEAST 12 DIFFERENT COMPONENTS IN MIDGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLOBIN CTT-V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8E8567BC630A646E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
   as
                                                                                                           MEMBRANE PROTEIN.
LIC NUCLEOTIDE-GATED CATION CHANNEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n update)
PHOTORECEPTOR, ALPHA SUBUNIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
4.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Usage
   its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 163;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
its
way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

밁 Q

```
RRESULT 9
RR5_PR
RR5_PD PR
RR5_PD PR
AC P5129
DT 01-0C
DT 01-0C
DT 01-0C
DT 01-0C
CLLOR
GR RPS5.
OS POTPH
OG CLKOR
CKAR
RN [1]
RP SEQUE
RC STRAI
RA Reith
RT Gomm
RL Plant
CC ----
CC This
CC This
CC Use
CC use
CC or se
CC ----
CC Or se
CC -----
CC Or se
CC -----
CC Or se
CC -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STITE TO THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE THE TENT OF THE THE TENT OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-1996
01-OCT-1996
01-OCT-1996
CHLOROPLAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RR5_PORPU
P51298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NP_BIND
BINDING
BINDING
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Interpro; IPRUUZUZZ,

Pfam; PF00914; CNG_membrane; 1.

Pfam; PF00027; CNMP_binding; 1.

PROSITE; PS00889; CNMP_BINDING_1; 1.

PROSITE; PS00889; CNMP_BINDING_2; 1.

PROSITE; PS50042; CNMP_BINDING_3; 1.

PROSITE; PS50042; CNMP_BINDING_3; 1.
                 modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                   between the Swiss Institute of Bioinformatics the European Bioinformatics Institute. There a
                                                                                                                                                                                      Plant Mol. Biol. Rep. 13:333-335(1995).
-!- SIMILARITY: BELONGS TO THE S5P FAMILY OF RIBOSOMAL PROTEINS
                                                                                                                                                                                                                                                                                                                                                           Chloroplast .
Eukaryota; Rhodophyta;
NCBI_TaxID=2787;
                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                   genome
                                                                                                                                                                                                                                                                          STRAIN-AVONPORT;
Reith M.E., Munholland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X89599; CAA61758.1; -. InterPro; IPR000595; -. InterPro; IPR002025; -.
                                                                                                                                                                                                                                                       "Complete nucleotide
                                                                                                                                                                                                                                                                                                                                                                                                                       Porphyra purpurea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        90 HKNKDKKKGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 HKNKGKKNGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8; Conserv
                                                                                non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel. 34, Created)
(Rel. 34, Last sequence up
(Rel. 34, Last annotation
30S RIBOSOMAL PROTEIN S5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1117
1137
1150
1169
1193
1193
2213
2251
2274
4316
4316
4516
4516
498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74778
                                                                                                                                                                                                                                                     sequence of the
                                                                                                                                                                                                                                                                            ٦
: .
                                                                                                                                                                                                                                                                                                                                                                                Bangiophyceae; Bangiales; Bangiaceae; Porphyra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 44; DB
Pred. No. 16;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAMP (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
; 989D515F61AC7D31 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EXTRACELLULAR H6 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CYTOPLASMIC
H3 (POTENTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Н5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          H4 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H2 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC |
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                     Porphyra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      174 AA.
                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL).
                                                                                as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.isb-sib.ch/announce/
                                                            Usage
                                                                                                     are no
                                                                                                                                                                                                                                                     purpurea chloroplast
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 645
                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                         the
                                                            γd
                                                                                                     restrictions
                                                            and
                                                                                                                         EMBL outstation
                                                                                  is
                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                         collaboration
L outstation -
                                                                                'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

```
YDVB_SCHPO
ID YDVB_SCHPO
ID YDVB_S
AC 014229
DT 15-JUL
DT 15-JUL
DT 15-JUL
DT 15-JUL
DT SCHIZC
OC Eukary
OC Eukary
OC SCHIZC
OX NCBI_J
RN [1]
RA SEQUEE
RC STRAII
RA Badcoo
RL Submi:
CC This betwe
CC the E
CC use
CC use
CC entit
CC or st

밁
                                                                                                                                                                                                                                                                                                                           20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DR DR DR DR DR DR DR DR DR SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                  IGA_NEIGO
P09790;
01-MAR-1989
01-MAR-1989
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outset the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00333; Ribosomal_S5; 1.
PROSITE; PS00585; RIBOSOMAL_S5; 1.
Ribosomal protein; Chloroplast.
SEQUENCE 174 AA; 18294 Mari
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
HYPOTHETICAL 43.4 KDA PROTEIN C6F12.11C IN CHROMOSOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
HSSP;
Neisseria gonorrhoeae
                                           PROTEASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Badcock K., Churcher C.M., Barrell B.G., Rajandream M.A., Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schizosaccharomyces.
NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SPAC6F12.11C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            014229;
                                                                  IGA-SPECIFIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hypothetical protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mendel; 10355;
                                                                                                                                                                                                                                                                                    212
                                                                                                                                                                                                                                                                                                                             4 KGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 KNKGKKNGKHNGWK
                                                                                                                                                                                                                                                                                    KLKLNGKHKGTKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KKQGKSKEKDNGWE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Z98533; CAB11095.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U38804; AAC08184.1; P02357; 1PKP.
                                                                                                                                                                                                                                                                                                                                                                           9;
                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000851;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 374 i
                                                               (Rel. 10, Created)
(Rel. 10, Last sequence update)
(Rel. 40, Last annotation updat
C SERINE ENDOPEPTIDASE PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PORpu; rps5;1
                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                    224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43.9%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                             43.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WW;
                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2.
                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POLY-PRO. 615C054F6AE0D471 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9052BDA33262460C CRC64;
                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                               PRECURSOR (
                                                                                                                                                                                                                                                                                                                                                                                           No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No. 43;
                                                                                                                                                                           1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6.5
BB
                                                                                                                                                                           Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                               (EC 3.4.21.72) (IGA
                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                 Length 374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 174;
                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gh a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wood V.;
                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             way
                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
OC GREED DE AC
                                                                                                                                                                                                       RESULT 12
GARP_PLAFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOLD BURNERS SERVICE S
                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                 GARP_PLAFF
P13816;
01-JAN-1990
01-JAN-1990
15-JUL-1999
GLUTAMIC ACII
                                                   GARP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROPEP
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EW the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-s
  Plasmodium falciparum (isolate FC27 Eukaryota; Alveolata; Apicomplexa; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bachovchin W.W., Plaut A.G., Flentke G.R., Lynch M., Kettner C.A.;
"Inhibition of IgAl proteinases from Neisseria gonorrhoeae and Hemophilus influenzae by peptide prolyl boronic acids.";
J. Biol. Chem. 265:3738-3743(1990).
-!- FUNCTION: THIS PROTEASE IS SPECIFIC FOR IMMUNOGLOBULIN A.
-!- CATALYTIC ACTIVITY: CLEAVAGE OF IMMUNOGLOBULIN A. MOLECULES AT CERTAIN PRO-|-XAB BONDS IN THE HINGE REGION. NO SMALL MOLECULE SUBSTRATES ARE KNOWN.
-!- SUBCELLULAR LOCATION: SECRETED.
-!- DOMAIN: THE SIGNAL PEPTIDE GUIDE THE PRECURSOR TO THE PERIPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEROPS; S06.001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; A26039; A26039.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X04835; CAA28538.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pohlner J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fransmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=90154052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTIVE SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 325:458-462(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              IgA protease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=87115823; PubMed=3027577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-MS11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                              326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pohlner J., Halter R., Beyreuther K., Meyer Gene structure and extracellular secretion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN. THE HELPER DOMAIN IS THEN RELEASED BY AUTOPROTEOLYSIS. SIMILARITY: BELONGS TO PEPTIDASE FAMILY S6 (SERINE PROTEASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SPACE, AND THE CARBOXY-TERMINAL HELPER DOMAIN ASSOCIATES WI' OUTER MEMBRANE TO FORM A PORE FOR EXCRETION OF THE PROTEASE
                                                                                                                                                                                                                                                                                                                            HKNKG--KKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                              HDNAGTVKGNGEHH-WKT
                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PR00921; IGASERPTASE
                                                                      ACID-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IPR000710;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28
987
278
986
1018
1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Serine protease;
                                                                   (Rel. 13, Created)
(Rel. 13, Last sequence update)
(Rel. 38, Last annotation update)
ID-RICH PROTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Signa
                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          986
1532
278
987
1019
1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=2105953;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                            43.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     168976
(isolate FC27 / Papua New Guinea)
Apicomplexa; Haemosporida; Plasmo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                beta subdivision; Neisseriaceae;
                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zymogen; Autocatalytic
                                                                                                                                                                                                                                                                                                                                                                                                            Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLEAVAGE (AUTO-).
CLEAVAGE (AUTO-).
CLEAVAGE (AUTO-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HELPER
                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GA-SPECIFIC
                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68FF4112BD22F40D
                                                                                                                                                                                                                                                                                                                                                                                                  ر 42.5;
امر 65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDE
                                                                                                                                                                                  678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SERINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T.F.;
of Neisseria
                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲,
                                                                                                                                                                                                                                                                                                                                                                                       ω
       Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1532;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENDOPEPTIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cleavage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gonorrhoeae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ıs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Neisseria.
                                                                                                                                                                                                                                                                                                                                                                                       w
۔۔
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HTIW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      'n
                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    o
O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    way
                                                                                                                                                                                                                                                                                                                                                                                       2
```

September .

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                              PTH_HELPJ
Q9ZJC3;
                                                                                                                      CHAIN
DOMAIN
DOMAIN
DOMAIN
                                                                            gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
-i- FUNCTION: THE NATURAL SUBSTRATE FOR
                                                                                                                                                                                                                                                                30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
PEPTIDYL-TRNA HYDROLASE (EC 3.1.1.29) (PTH).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-89040048; PubMed=2903445;
Triglia T., Stahl H.-D., Crewther
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                  Helicobacter pylori J99 ((Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                          PTH OR JHP1390.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Structure of a Plasmodium
                                                                                                                                                                                                             NCBI_TaxID=85963;
                                                                                                                                                                                                                           Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR; A54514; A54514.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acid-rich protein (GARP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=5837;
[1]
                                                                                                            Genomic sequence comparison
                                                                                                                                                                                                                                                                                                                                                                                  414 HKSKGKKDKGKKDKGKH 430
                                                                                                                                                                                                                                                                                                                                                                                                       1 HKNKGKKN----
          SUBCELLULAR LOCATION: CYTOPLASMI
                                CATALYTIC ACTIVITY: N-SUBSTITUTED N-SUBSTITUTED AMINO ACID + TRNA.
                                                                    TRNAS
                                                        (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochem. Parasitol. 31:199-202(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J03998; AAA29605.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FROM N.A.
                                                                 WHICH DROP OFF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26
120
372
417
576
605
                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antigen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
678
164
416
441
604
653
                                                                                                                                                                                                                                 J99 (Campylobacter pylori J99).
teria; epsilon subdivision; Helicobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                       GKH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80551 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                      42.9%;
52.9%;
TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Crewther P.E., Silva A.,
           CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    falciparum gene that encodes a glutamic
                                                                                               of two unrelated isolates r pylori.";
                                                                  RIBOSOME
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GLUTAMIC ACID-RICH PROTEIN.
15 X 3AA TANDEM REPEATS OF K-K-X.
9 X APPROXIMATE TANDEM REPEATS.
5 X APPROXIMATE TANDEM REPEATS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POLY-GLU
                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X APPROXIMATE TANDEM REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2A8F85606496EA9E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
FAMILY
                                                                                                                                                                                                                                                                                                                         186 AA
                                                                OR THIS
           (BY SIMILARITY)
                                           AMINOACYL-TRNA + H(2)O
                                                                                                                                                                                                                                                                                                                                                                                                                                    35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                !:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                                                PROTEIN SYNTHESIS
                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Anders R.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γď
                                                                                                             of the
                                                                                                                                            Ives C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                Doig P.C.,
                                                                                                                                  Vovis G.F.
                                                                                                                                                                                                                                                                                                                                                                                                                          6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for commercial
                                                                                                             human
                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                          <u>;</u>
```

```
PER PROCESS OF THE PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-JUL-1999
15-JUL-1999
15-JUL-1999
                                                                             METAL
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entre the European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kunst F., Ogasawara N., Yoshikawa H., Danchin A.;
Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.
-!- COFACTOR: BINDS ONE ZINC ION (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO PEPTIDASE FAMILY M3 (ZINC METALLOPROTEASE);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF01195; Pept_trNA_hydro; 1.
PROSITE; PS01195; PEPT_TRNA_HYDROL_1;
PROSITE; PS01196; PEPT_TRNA_HYDROL_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                             METAL
                                                                                                                                                                                                                                                                                                                    entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Firmicutes; B
Bacillus/Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PEPF_BACSU 031605;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BACSU
    SEQUENCE
                                                                                                                                                     Pfam; PF01432; Pe
PROSITE; PS00142;
                                                                                                                                                                                                                                              SubtiList;
                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus subtilis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YJBG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OLIGOENDOPEPTIDASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AE001561; AAD06971.1; -. HSSP; P23932; 2PTH.
                                                         METAL
                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                            Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hydrolase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4 KGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALSO KNOWN AS THE THIMET OLIGOPEPTIDASE SUBFAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KGGGNGGHNGLKS
                                                                                                                                                                                                                                                                    Z99110; CAB13011.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
8; Conserv
                                                                                                                                                                                                 IPR001567
                                                                                                                                                                                                                          IPR000130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IPR001328; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9 (Rel. 38, 79 )
                                                                                                                                                                                                                                                 BG13136;
                                                                                                                            Metalloprotease; Zinc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   186 AA; 20956 MW;
                                                                             395
396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 38, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
       Ą,
                                                                                                                                                Peptidase_M3; 1.
42; ZINC_PROTEASE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
  402
70144
                                                                             395
396
                                                                                                                                                                                                                                              yjbG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    41.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HOMOLOG (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Clostridium group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               group;
       WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 41; DB Pred. No. 14; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1
ZINC (CATALYTIC) (BY SIMILARITY)
BY SIMILARITY.
ZINC (CATALYTIC) (BY SIMILARITY)
ZINC (CATALYTIC) (BY SIMILARITY),
674BOAFD6FAODO75 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95315FDF43D06112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ence update)
tation update)
C 3.4.24.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  609
                                                                                                                                                                                                                                                                                                                                          (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                             SIMILARITY).
                                                                                                     SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                  restrictions
                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL
                                                                                                                                                                                                                                                                                                                                                                                            is
                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration -
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                   tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                          .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                        outstation
                                                                                                                                                                                                                                                                                                                                                                                         in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                   commercia.
                                                                                                                                                                                                                                                                                                                                                                                  no
                                                                                                                                                                                                                                                                                                                                                                                                                  on
                                                                                                                                                                                                                                                                                                                                                                                       way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
MUTS_THEMA
                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-9287316; PubMed-10360571;

A Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

A Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,

A McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

A Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

Stewart S.L., Smith H.O., Venter J.C., Fraser C.M.,

Heidelberg J.L., Smith H.O., Venter J.C., Fraser C.M.,

"Evidence for lateral gene transfer between Archaea and Bacteria from

"Evidence of Thermotoga maritima.";

"Lature 399:323-329(1999).

"L Nature 399:323-329(1999).

"L NATURE SPOTEIN HAS A WEAK ATPASE ACTIVITY.

"INDNA. IT IS PROTEIN HAS A WEAK ATPASE ACTIVITY.

"INDNA. IT IS PROTEIN HAS A WEAK ATPASE ACTIVITY.
Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 50.0 Matches 6; Conservative
                                                                         PROSITE; PSC
DNA repair;
NP_BIND
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
SEQUENCE 7
                                                                                                                                                                                                                                                       EMBL; U71155; AA
EMBL; AE001811;
TIGR; TM1719; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MUTS_THEMA
P74926;
15-JUL-1998
30-MAY-2000
30-MAY-2000
                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Wetmur J.G., Rosenfeld A., Wong D.M.; "Hyperthermophilic MutS proteins: isolation, characterization and enhancement of PCR specificity." Submitted (OCT-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-MSB8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                               Pfam; PF00488; MutS_C; 1. Pfam; PF01624; MutS_N; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. Wetmur J.G., Rosen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Thermotogales; Thermotoga.
NCBI_TaxID=2336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Thermotoga maritima.
Bacteria; Thermotoga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MUTS OR TM1719
                                                                                                                                                                                                                           InterPro; IPR000432; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA MISMATCH REPAIR PROTEIN MUTS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358 YENKGKRNGAYS 369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>--</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HKNKGKKNGKHN 12
                                                                                                                                                                               PS00486; DNA_MISMATCH_REPAIR_2; 1.
                                                                                         ATP-binding;
589 596
233 233
262 262
287 287
506 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (Rel. 36, Created)
(Rel. 39, Last seq
(Rel. 39, Last ann
 Conservative
                                                                                                                                                                                                                                                                       AAB16999.1; -.
1; AAD36785.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DSM 3109;
                                                                            A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50.0%;
                                                                           91065 MW;
               41.8%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
Last annotation update)
                                                                         ATP (PÔTENTIAL).

A -> G (IN REF. 1).

L -> W (IN REF. 1).

L -> G (IN REF. 1).

K -> T (IN REF. 1).

K -> T (IN REF. 1).
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5;
Score 41; DB 1; Pred. No. 59; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 45;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              793 AA
 ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                             Length 793;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
```

```
Qy
밁
772
       2 KNKGKKNGKHN 12
KNNTKKNGKSN 782
```

Search completed: July Job time: 971 sec 2001, 09:26:40

CHANNING TO A STATE OF THE STAT

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                               Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OM protein - protein search, using sw model
                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                     SPTREMBL_16:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate
6: sp_mammal:*
7: sp_mbc:*
8: sp_organelle:*
9: sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   July 6, 2001, 09:25:56; Search time 118.42 Seconds (without alignments) 17.876 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                   425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-437-912-9
98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 HKNKGKKNGKHNGWKT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                          sp_organelle:*
                                                                                                                                                            sp_invertebrate:*
                                                        sp_rodent: *
                                                                     sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                   425026
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

### SUMMARIES

19	18	17	16	15	14	13	12	11	10	9	8	7	6	<sub>(</sub> ,	4		ν	فسو	No.	•
43	43	43	43	44	44	45	46	46	46	46	46	46	46	46	47	47	49	50	Score	
43.9	43.9	43.9	43.9	44.9	44.9	45.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	46.9	48.0	48.0	50.0	51.0	Match 1	de
915	808	504	171	806	298	1251	2254	2187	1388	1372	857	648	516	95	275	225	3898	581	Length 1	
ū	10	5	w	10	ν	Ŋ	4	4	4	4	10	N	ω	٢	N	w	14	10	DB	
Q9GNU7	023052	097467	Q9UTT3	Q9FIM2	Q9K6X3	016637	Q9HCY0	Q9Н197	Q9HAW2	Q9HAW1	Q9SUV0	034507	Q9P6E6	Q9HL50	Q9S2U7	014262	Q68965	Q9SEL2	ID	
Q9gnu7 plasmodium	023052 arabidopsis	O97467 plasmodium	Q9utt3 schizosacch	Q9fim2 arabidopsis	Q9k6x3 bacillus ha	016637 caenorhabdi	Q9hcy0 homo sapien	homo	Q9haw2 homo sapien	Q9haw1 homo sapien	Q9suv0 arabidopsis		Q9p6e6 neurospora	Q9h150 thermoplasm	Q9s2u7 streptomyce	014262 schizosacch	Q68965 classical s	Q9sel2 vitis vinif	Description	

#### ALIGNMENTS

```
RESULT
014262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 10
    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                       014262;
01-JAN-1998 ()
01-MAY-1999 ()
01-MAR-2001 ()
HYPOTHETICAL
                                                                                                                                      Gentles S., Churcher C.M., Wood V., Barrell B. Submitted (SEP-1997) to the EMBL/GenBank/DDBJ -!- SIMILARITY: TO YEAST YMR130W. EMBL; 299532; CAB16722.2; -. InterPro; IPR001454; -.
                                                                     Hypothetical SEQUENCE 2
                                                                                                                                                                                                                                                                                                                                               Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001650; -. Pfam; pF00271; helicase_C; 1. pfam; pF00271; helicase_C; 1. pRINTS; pR00729; CDVENDOPTASE. pROSITE; pS0037; mYB_1; UNKNOWN_1. pROSITE; pS000531; RNASE_T2_2; UNKNOWN_1. SMART; SM00490; HELICC; 1. SMART; SM00490; Helicase; polyprotein. prosition of the pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Muramatsu M., Yamada A.;
"Comparison of the entire nucleotide and "Comparison of the entire nucleotide and comparison of the entire nucleotide standard hog cholera vaccine standard hog cholera vaccine standard hog cholera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      068965;
01-NOV-1996 (TremBLrel. 01, Cr.
01-NOV-1996 (TremBLrel. 16, La.
01-MAR-2001 (TremBLrel. 16, La.
HGC CHOLERA VIRUS POLYPROTEIN.
                                                                                                                                                                                                                                               STRAIN-972;
                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                         Schizosaccharomyces.
NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                       SPAC7D4.05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=95390794; PubMed=7661692; Ishikawa K., Nagai H., Katayama K., Takeuchi K., Hishiyama M., Saitoh A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    014262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arch. Virol. 140:1385-1391(1995).
-!- SIMILARITY: TO HELICASE C-TERMINAL DOMAIN.
EMBL; D49533; BAA08477.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Classical swine fever virus
Viruses; ssRNA positive-strand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR001410;
InterPro; IPR001568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000280;
InterPro; IPR001005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            parental strain ALD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=11096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pestivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HKNK----GKKNGKHNGW 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HKMKTLCPGSSLGKHNGW 3279
                                                                                                               PF00702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                    IPR001454;
                                                                                                                                                                                                                                                                                                                                                                                                                                       8 (TrEMBLrel. 05, Cre
9 (TrEMBLrel. 10, Las
1 (TrEMBLrel. 16, Las
AL 26.6 KDA PROTEIN C
                                                                   l protein.
225 AA; 26299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                           Hydrolase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              50.0%;
      48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 01, Creat
. 01, Last
. 16, Last
                                                                     ₩;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Saitoh A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
IN C7D4.05 IN CHROMOSOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
    Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                   B6C38F28D230A2ED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              No ;
    47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tsutsui M., '
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
51;
    DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                deduced a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA stage;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                      .G.,
                                                                                                                                                                                                     databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4;
Length 225;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 3898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tanabayashi
, Gotoh K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid sequence and the wild-type
                                                                                                                                                                                                                      Rajandream
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Flaviviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

```
AC DIT
                                                                                                                                                                                                                                                                                                                                                                      RESULT
Q9HL50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRESULT PRESUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                 Q9HL50;
Q9HL50;
01-MAR-2001
01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9S2U7
Q9S2U7;
Q1-MAY-2000
Q1-MAY-2000
Q1-MAY-2000
SEQUENCE FROM N.A.
STRAIN-DSM 1728;
STRAIN-DSM 1728;
MEDLINE-20479972; PubMed=11029001;
Ruepp A., Graml W., Santos-Martinez M.-L., Koretke Mewes H.-W., Frishman D., Stocker S., Lupas A.N., B "The genome sequence of the thermoacidophilic scave
                                                                                                                                                                                     Thermoplasma acidophilum.
Archaea; Euryarchaeota; Thermoplasmales;
                                                                                                                                                                                                                               TA0381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria;
Actinomycetales; Streptomycineae; Stre
                                                                                                                                                                    Thermoplasma.
                                                                                                                                                                                                                                                HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=97000351; PubMed=8843436; Redenbach M., Kieser H.M., Denapaite Kinashi H., Hopwood D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUTATIVE INTEGRAL SC4G6.04C.
                                                                                                                                             NCBI_TaxID=2303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bentley
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "A set of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 HKNKGKKNG--KHNGW
                                                                                                                                                                                                                                                                                                                                                                                             G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               set of ordered cosmids and a detailed 8 Mb Streptomyces coelicolor A3(2) ch Microbiol. 21:77-96(1996).

JALO96884; CABS1427.1; -
ENCE 275 AA; 29424 MW; B46AF89DCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KNGKHNGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNGKHNSW 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HKNHGKKSGLNPHDWW 75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     К. J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 7; Conser
                                                                                                                                                                                 Euryarchaeota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (JUL-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (JUL-1999)
                                                                                                                                                                                                                                                l (TrEMBLrel. 16,
l (TrEMBLrel. 16,
l (TrEMBLrel. 16,
hL PROTEIN TA0381.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (TrembLrel. 13, 1) (TrembLrel. 13, 1) (TrembLrel. 13, 1) (TrembLrel. 13, 1) (Tegral Membrane P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , Parkhill J., Ba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Harris
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              )
to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48
87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 47; DB Pred. No. 7.6; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Barrell B.G., Rajandream M.A.;
EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEIN.
                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last
Last
                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 6.2;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B46AF89DCA186591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence update)
annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     275
                                                                                                                                                                                                                                                                                                                                                   95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Actinobacteridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
7.6;
                                                                                                                                                                                   Thermoplasmaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genetic and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eichner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 275;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Α.,
                     Baumeister W ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cullum J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               physical map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT
034507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q PROULT | 
        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQ RT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     German Neurospora genome proj
Submitted (MAY 2000) to the E
EMBL; AL355926; CAB91223.1; -
Interpro; IPR001553; -
Interpro; IPR003593; -
SMART; SM00382; AAA; 1.
                                                                                                                                                                                                                                               01-JAN-1998 (TrEMBLrel.
01-JAN-1998 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
MEDLINE=98044033; PubMed=9384377;
Kunst F., Ogasawara N., Moszer I., Ł
Azevedo V., Bertero M.G., Bessieres
                                                                                                                                                                                                                                                                                                              034507;
                                                                                                                                                                                                                                                                                                                                     034507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schulte U., Aign V.,
Nyakatura G., Mewes I
Submitted (MAY-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-2000 (TrembLrel.
01-OCT-2000 (TrembLrel.
01-MAR-2001 (TrembLrel.
RAD57 RELATED PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9P6E6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 407:508-513(2000).
EMBL: AL445064; CAC11525.1; Hypothetical protein.
SEQUENCE 95 AA; 11025 MW;
                                                                                                                                                                                   Bacillus subtilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=5141;

Neurospora crassa.

Neurospora crassa.

Sordariales; Sordariaceae; Neurospora.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9P6E6
                                                                                  SEQUENCE FROM N.A.
                                                                                                                        Bacteria; Firmicutes; Bacillus/Staphylococcus Bacillus/Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B17C10.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acidophilum.";
                                                                                                                                                                                                                                                                                                                                                                                                                                       486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KNKGKKNGKHNGWK 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HKNKGKKNGKHNGWK 15
                                                                                                                                                                                                                              PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                       KGVGKKNGKEEGMK 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HKQLSKKNGSKNGRK 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 60. 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        516 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ξ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hoheisel J., Brandt P., I
H.W., Mannhaupt G.;
to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46
                                                                                                                                             Bacillus/Clostridium s group; Bacillus.
                                                                                                                                                                                                                                                 05,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15,
15,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           project;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , WM
                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 46; DB
Pred. No. 3.8;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10B5282A55FB8E68 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8A1B9CA95D6AA295 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                   Albertini A.M., Alloni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46;
No.
                                                                                                                                                                                                                                                                                                                                 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  516 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
3.8;
                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fartmann B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
  Borchert S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Holland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
Q9SUVO
ID Q0
AC Q0
DT 00
DT 00
DT 00
DT 00
CON FINANCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RA Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A., Denizot F., Devine K.M., Dusterhoft A., Ehrlich S.D., Emmerson P.T., RA Denizot F., Devine K.M., Dusterhoft A., Ehrlich S.D., Emmerson P.T., RA Entiz C., Fujita M., Fujita Y., Fuma S., Galizzi A., Galleron N., RA Chim S.Y., Glaser P., Goffeau A., Golightly E.J., Grandi G., Ra Chim S.Y., Glaser P., Goffeau A., Golightly E.J., Grandi G., RA Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A., A Hibert H., Holsappel S., Hosono S., Hullo M.F., Itaya M., Jones L., Joris B., Karamata D., Kasahara Y., Klaerr Blanchard M., Klein C., RA Moris B., Karamata D., Kasahara Y., Klaerr Blanchard M., Klein C., RA Moris B., Karamata D., Kasahara Y., Klaerr Blanchard M., Klein C., RA Moris B., Kapidus A., Lardinois S., Lauber J., Lazarevic V., Lazarevic V., Lee S.M., Levine A., Liu H., Masuda S., Mauel C., Medigue C., RA Medina N., Mellado R.P., Mizuno M., Moestl D., Nakai S., Noback M., Ra Moone D., O'Reilly M., Ogawa K., Ogiwara A., Oudega B., Park S.H., RA Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M., Presecan E., Pujic P., Purnelle B., Rapport G., Rey M., Reynolds S., Ra Presecan E., Pujic P., Purnelle B., Rapport G., Rey M., Reynolds S., Ra Ra Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadaie Y., Sato T., Scanlan E., Schleich S., Schroeter R., Scoffone F., Sekiguchi J., Seconi E., Takapi T., Takahashi H., Takamaru K., Viari A., Wanti 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Foulger D., Errington J.;
Submitted (AUG-1997) to the EMBL/GenBank/DDBJ datable Submitted (AUG-1997) to the EMBL/GenBank/DDBJ datable Submitted (AUG-1997) to the EMBL OF PROTEIN KIEMBL; 299112; CAB13450.1; -.
EMBL; 299112; CAB13450.1; -.
EMBL; 299112; CAB13450.1; -.
InterPro; IPRO0719; -.
InterPro; IPRO0719; -.
InterPro; IPRO07299; -.
PFGM; PF00069; Pkinase; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATP; UNKNOWN_1.
PROSITE; PS00118; PROTEIN_KINASE_ST; 1.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
                                                                                         Q9SUVO PRELIMINARY;
Q9SUVO;
O1-MAY-2000 (TIEMBLIEL 13, C)
O1-MAY-2000 (TIEMBLIEL 13, Li
O1-MAY-2001 (TIEMBLIEL 16, Li
O1-MAR-2001 (TIEMBLIEL 16, Li
HYPOTHETICAL 96.9 KDA PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kunst F., Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Borriss R., b
F8B4.120 OR AT4G32420.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The complete genome sequence of the gram-positive bacterium Bacillus subtilis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATP-binding; Se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Viari A., Wambutt R., Wedler E., Wedler H., Weitzenegger T.,
Winters P., Wipat A., Yamamoto H., Yamane K., Yasumoto K., Y
Yoshida K., Yoshikawa H.F., Zumstein E., Yoshikawa H., Danck
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SMART; SM00220; S_TKC; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 KNKGKKNGKHNGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENKTKKNGKRKKW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       390:249-256(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ogasawara N., (NOV-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Boursier L., Brans A., Braun M., Brignell S.C., Bron S.,
Bruschi C.V., Caldwell B., Capuano V., Carter N.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Serine/threonine-protein kinase; Transferase
48 AA; 71866 MW; 9653AB5CFBAA7900 CRC64;
                                                                                                           KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14
                                                                                                                                                                                                                                                                                                                                                                                                                                                           329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46.9%;
61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the EMBL/GenBank/DDBJ databases.
SER/THR FAMILY OF PROTEIN KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yoshikawa H., Danchin A.;
the EMBL/GenBank/DDBJ databases
                                                                                                                                           Last sequence update)
Last annotation updat
                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           core 46; DB ced. No. 25; Mismatches
   Tracheophyta; Spermatophyta;
                                                                                                                                                                                                                                                                                   B
                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Shin B.S., Soldo B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 i G.,
Henaut A.,
Tones L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뫄
        Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                       Q9HAW1;
Q9HAW1;
Q1-MAR-2001
Q1-MAR-2001
Q1-MAR-2001
                                                                                                                                                         Schramm L., Pendergrast P.S., Sun Y., Hernandez N Schramm L., Pendergrast P.S., Sun Y., Hernandez N "Different human TFIIIB activities direct RNA pol transcription from TATA-containing and TATA-less Genes Dev. 14:2650-2663(2000).
                                                                                                                               EMBL; AF298152; AAG30221.1; Initiation factor.
                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE=20496900; PubMed=11040218;
                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EU Arabidopsis sequencing projections the EMBL; AL034567; CAR22569 1; --
EMBL; AL161581; CAB79959.1; --
                                                                                                                                                                                                                                                                                                                                                                                   Ol-MAR-2001 (TrEMBLrel. 16, Created)
Ol-MAR-2001 (TrEMBLrel. 16, Last sequence update)
Ol-MAR-2001 (TrEMBLrel. 16, Last annotation update)
RNA POLYMERASE III TRANSCRIPTION INITIATION FACTOR B''
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00160; pro_isomerase; 2.
PRINTS; PR00153; CSAPPISMRASE.
Probom; PD001861; -; 1.
PROSITE; PS50072; CSA_PPIASE_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Terryn N., Ardiles W.,
De Keyser A., Neyt P.,
Gielen J., Van Montagu
Submitted (MAR-2000) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bevan M., Terryn N., Ardiles W., Buysshaert C., Dasseville F
De Clerck R., De Keyser A., Neyt P., Rouze P., Van Den Daeld
Villaroel R., Gielen J., Van Montagu M., Hoheisel J., Mewes
Mayer K.F.X., Lemcke K., Schueller C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical protein.
SEQUENCE 857 AA; 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001046; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΞU
                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=3702;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brassicales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Magnoliophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 KNKGKKNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis sequencing project;
bmitted (AUG-1999) to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KSDGKKNGKH
          Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR002130; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (DEC-1998)
                                                                                                          factor.
1372 AA
            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                    (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brassicaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        eudicotyledons;
                                                                                                            Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11
                                                                                                                                                                                                                                                                                                                                Primates;
                                                                                                                                                                                                                                                                                                                                                    Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96854 MW;
                          46.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46.98;
80.08;
                                                                                                            154605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , Buysshaert (
, Rouze P., Va
, Mewes H.
, Mewes H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      project;
                                                                                                            MW;
      Score Pred. 1
2; Mis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 46;
                                                                                                                                                                                                                                                                                                                             Craniata; Ve Catarrhini;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17E4FA842D58D972 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>-</u>
          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                            C7416FD179610F22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              t C., Dasseville R., De Cler
Van Den Daele H., Villaroel
H.W., Lemcke K., Mayer K.F.
                          46;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1372 AA.
                                                                                                                                                                                                                               Hernandez N.;
                            DB
54;
                                                                                                                                                                                                                                                                                                                                                  Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DΒ
                                                                                                                                                                                                                                                                                                                             Hominidae;
                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
        4;
                                                                                                                                                                                                         polymerase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rosidae;
                                             Length 1372;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                      promoters.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R., De Cler
., Villaroel
                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rille R.,
Daele H.,
Mewes H.W.,
                                                                                                                                                                                                                                                                                                                                                                                       SHORT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        eurosids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clerck
        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R.,
        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      II;
        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
OF THE PROPERTY OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
Q9H197
        A CONTRACTOR OF THE CONTRACT O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9H197
Q9H197;
Q1-MAR-2001
01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9HAW2;
Q9HAW2;
01-MAR-2001
01-MAR-2001
01-MAR-2001
                                           EMBL;
                                                                                    EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

MEDLINE=20496900; PubMed=11040218;
SChramm L., Pendergyrast P.S., Sun Y.,
Poliferent human TFIIIB activities dir
"Transcription from TATA-containing and
Genes Dev. 14:2650-2663(2000).

EMBL: AF298151; AAG30220.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
RNA POLYMERASE III TRANSCRIPTION INITIATION FACTOR B''.
                                                                                                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                                                                                                       survival
                                                                                                                                                                                                                                                                                                                             with 9
                                                                                                                                                                                                                                                                                                                                              "Transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TFNR PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
Eukaryota; Metazoa; C
                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Initiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             338 KNKFKREEKTNGWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 KNKGKKNGKHNGWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10
ival motor neuron gene.",

iitted (DEC-1999) to the E
Av279120; CAC21448.1; J
Av279121; CAC21448.1; J
Av279122; CAC21448.1; J
Av279123; CAC21448.1; J
Av279124; CAC21448.1; J
Av279125; CAC21448.1; J
Av279126; CAC21448.1; J
Av279127; CAC21448.1; J
Av279129; CAC21448.1; J
Av279129; CAC21448.1; J
Av279139; CAC21448.1; J
Av279139; CAC21448.1; J
Av279130; CAC21448.1; J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNKFKREEKTNGWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KNKGKKNGKHNGWK
                                                                                                                                                                                                                                                                                                                           repeats
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                            Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                Herchenbach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (FRAGMENT)
                                                                                                                                                                                                                                                                                                                           of a novel
                                                                                                                                                                                                                                                                                                                                              factor-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         46
57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     156302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16,
16,
                                                                                                                                                                                                                                                                                                                                                                `
;
                                                                                                                                                                                                                                                                                                                         55-amino
                                                                                                                                                                                                                                                                                                                                              nuclear re
    JOINED
                                                                                                                                                                                                                                                                                       EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                           ar regulator (TF)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C1A6011AB937D12F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , Hernandez N.;
irect RNA polymerase
nd TATA-less promoter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                       (TENR) is f closely
                                                                                                                                                                                                                                                                                       databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4;
                                                                                                                                                                                                                                                                                                                                                                В.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1388;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lymerase III promoters.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                is
                                                                                                                                                                                                                                                                                                                         s a large procedured
                                                                                                                                                                                                                                                                                                                                            large
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

Gaps

0,

protein d to the

Ĩ

```
RESULT OPHCYO ID POPE OPHCYO OPHCY O
  RESULT
016637
ID 01
AC 01
DT 01
DT 01
DT 01
DT 01
ON WO
GN WO
OS Ca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             망
                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 8
                                                                               016637 PRELIMINARY;
016637;
01-JAN-1998 (TrEMBLrel. (
01-MAY-2000 (TrEMBLrel. )
01-JUN-2000 (TrEMBLrel. )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9HCY0;
Q9HCY0;
01-MAR-2001
01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Wirth B.;

Kelter A.R., Herchenbach J., Wirth B.;

Kelter A.R., Herchenbach J., Wirth B.;

"The transcription factor like nuclear regulator (TFNR) contains novel 55-amino acid motif repeated 9 times and maps closely to Shombited (AUG-2000) to the EMBL/GenBank/DDBJ databases.

SUBMIL; AJJ38520; CAC04245.1; -.

SEQUENCE 2254 AA; 252844 MW; F350E96F53F04CFE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
  Eukaryota; Metazoa;
                   Caenorhabditis elegans
                                           W09G10.4 PROTEIN. W09G10.4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota;
Mammalia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
MCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PUTATIVE
                                                                                                                                                                                                                                                                                338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             338
                                                                                                                                                                                                                                                                                                                                                           Local Similarity les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                      2 KNKGKKNGKHNGWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUZ79134; CAC21448.1;

AUZ79135; CAC21448.1;

AUZ79135; CAC21448.1;

AUZ79137; CAC21448.1;

AUZ79139; CAC21448.1;

AUZ79139; CAC21448.1;

AUZ79139; CAC21448.1;

AUZ79141; CAC21448.1;

AUZ79142; CAC21448.1;

AUZ79143; CAC21448.1;

AUZ79144; CAC21448.1;

AUZ79145; CAC21448.1;

AUZ79146; CAC21448.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNKFKREEKINGWR
                                                                                                                                                                                                                                                                                KNKFKREEKTNGWR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KNKGKKNGKHNGWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AJ279150;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AJ279147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              001 (TrEMBLrel. 16, Created)
001 (TrEMBLrel. 16, Last sequence update)
001 (TrEMBLrel. 16, Last annotation update)
001 (TrEMBLrel. 16, Last annotation update)
TRANSCRIPTION FACTOR-LIKE NUCLEAR REGULATOR.
                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAC21448.1;
CAC21448.1;
CAC21448.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAC21448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2187
                                                                                                                                                                                                                                                                                351
                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15
    Nematoda;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351
                                                                                                                                                                                                                                                                                                                                                                                   46.9%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.98;
57.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245726
                                                                                   05,
13,
14,
                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOINED.
                                                                                   Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW;
                                                                                                                                                                                                                                                                                                                                                               ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                   Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
Chromadorea; Rhabditida; Rhabditoidea;
                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2FB083F5F82AFB55 CRC64;
                                                                                                                                                                         1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2254
                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
85;
                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                               4,
                                                                                                                                                                                                                                                                                                                                                                                                       Length 2254;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2187;
                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SMN1.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

ļ

밁

9

HVREGTKNLGRNGWMT

```
Qy
                                                                                                                                                                   RESULT
Q9K6X3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SQUERRA CONTRACTOR OF THE SQUERY OF THE SQUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 9
                                                Query Match
Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9K6X3 PRELIMINARY;
Q9K6X3;
01-OCT-2000 (TrEMBLrel. 1
01-OCT-2000 (TrEMBLrel. 1
01-OCT-2000 (TrEMBLrel. 1
                                                                                                                                                              SEQUENCE FROM N.A.

STRAIN-C-125 / JCM 9153;

Takami H., Nakasone K., Takaki Y.;

Takami H., Nakasone K., Takaki Y.;

Submitted (MAR-2000) to the EMBL/GenBank/DDBJ EMBL; AP001519; BAB07320.1; -

SEQUENCE 298 AA; 33374 MW; 5F86FB72EC1B62B
                                                                                                                                                                                                                                                                                                                                                  Bacillus halodurans.
Bacteria; Firmicutes; Bacillus/Clostridium
Bacillus/Staphylococcus group; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                FTSX
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CELL-DIVISION PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AF016671; AAB66112.2; -... IPR000408; -... IPR0002553; -... IPR0002553; -... Pfam; PF01602; Adaptin_N; 1... PF01602; Adaptin_N; 1... PF01602; Adaptin_N; 1... SEQUENCE 1251 AA; 139949 MW; C3BOB18DAEF1AA38 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-BRISTOL N2;
Bentley D., Goela D., Holmes
"The sequence of C. elegans
Submitted (AUG-1997) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
MEDLINE-99069613; PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Waterston R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [4]
SEQUENCE FROM N.A.
STORTH-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (JUL-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Waterston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BRISTOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      investigating biology. The C
Science 282:2012-2018(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rhabditidae; Peloderinae;
                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=86665;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'Genome sequence of the nematode C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         787 KKDGKKNGKKSGKK
                                                                                               Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KNKGKKNGKHNGWK
  HKNKGKKNGKHNGWKT
                                                Similarity 50.8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity 64...
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15
                                                                      44.9%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ţ
    16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Holmes A.; legans cosmid W09G10."; to the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15,
15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Caenorhabditis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            с.
                                                Score 44; DB Pred. No. 24; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 45; DB Pred. No. 70; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            elegans
                                                                                                                                                                   5F86FB72EC1B62BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            elegans: a platform for 
ns Sequencing Consortium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      298
                                                                    DB
24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ą
                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                             group,
                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.
                                                                                               Length 298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Consortium.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                   Indels
                                                ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
OPFIN2
OPFIN2
DOFIN2
DOFINA
DOFINA
DOFINA
DOFINA
DO
```

GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

```
Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
A_Geneseq_0601:*

1: /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:*
4: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
9: /SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:*
10: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
11: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
12: /SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
13: /SIDS8/gcgdata/geneseq/geneseqp/AA1992.DAT:*
14: /SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
15: /SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*
16: /SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*
17: /SIDS8/gcgdata/geneseq/geneseqp/AA1996.DAT:*
18: /SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
19: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
19: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
22: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
23: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
24: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
25: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
26: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
27: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
28: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
29: /SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       July 6, 2001, 09:07:14; Search time 113.68 Seconds (without alignments) 6.399 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-437-912-1
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  412676
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

.

110 98 110 110	Result
75 75 75 75 75 75 75 75	Score
100.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0	% Query Match
12 17 55 62 63 83 94 131 186	Length
21 21 21 21 21 21 21 21 21 21	DB
AAV81992 AAW07627 AAW81996 AAV93346 AAV93348 AAR75186 AAR93347 AAR93347 AAR75181 AAR75181 AAR93349	ID
Human high molecul Human high polymer Human high molecul Light chain of hum Light chain of hum partial peptide of Light chain of hum Light chain of hum Partial peptide of Light chain of hum Partial peptide of Light chain of hum Light chain of hum Light chain of hum	Description

A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis

WPI; 2000-376483/32.

is thal	AAG13901	21	396		44	45
is thal	AAG22954	21	389	58.7	44	44
is thal	AAG06064	21	389		44	43
S.	AAG49725	21	388		44	42
is thal	AAG13902	21	388	۳.	44	41
is thali	AAG13903	21	384		44	40
0	AAY37637	20	356		44	39
	AAG22955	21	309	·	44	38
s c	AAG06065	21	309	œ.	44	37
.₽ O	AAB87345	22	831		45	36
gment of me	AAW74581	19	564		45	35
	AAY96405	21	421		45	34
a polypept	AAW96263	20	421		45	33
	AAY73840	20	165		45	32
ococcus a	AAW98038	20	121	0	45	31
_	AAR75182	16	68	_	46	30
thal	AAG46905	21	179	N	47	29
dopšis thali	AAG24334	21	179	N	47	28
high	AAY81997	21	28	2	47	27
high mole	AAY81994	21	12	Ŋ	47	26
	AAY93352	21	11	5	. 49	25
	AAG43478	21	398	8	51	24
	AAG22263	21	398	8	51	23
	AAG43479	21	344	8	51	22
	AAG22264	21	344	68.0	51	21
	AAG43480	21	330	8	51	20
idopsis thali	AAG22265	21	330		51	19
d additive p	AAR26414	13	85	9	52	18
ht chain of	AAY93353	21	179	ω	55	17
chain of hu	AAY93345	21	47	ψ.	55	16
l peptide	AAR75178	16	110		68	15
il peptide	18	16	41	0	68	14
chain of	9334	21	186	2	69	13
Light chain of hum	AAY93350	21	16		69	12

#### ALIGNMENTS

```
AAY81992
                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                    Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                            McCrae RK;
                                                                                                             05-NOV-1999;
                                                              (MCCR/) WCCRAE R K.
                                                                                         10-NOV-1998;
                                                                                                                                18-MAY-2000.
                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                    Human high molecular weight kininogen domain 5 fragment #1.
                                                                                                                                                                                                                                                      16-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                           AAY81992;
                                                                                                                                                                                                                                                                                            AAY81992 standard; peptide; 12 AA.
                                                                                                                                                  WO200027866-A1.
                                                                                                                                                                                                                                                                                                               .
سر
                                                                                          98US-0107833
                                                                                                             99WO-US26419
```

Claim

5

Page 27-28; 52pp; English.

The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. It ka or a synthetic compound comprising part or all of the present sequence may be used in a pharmaceutical composition for inhibiting anylogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit and cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides.

0;

```
Query Match
Best Local Similarity
                                                                    The present peptide is derived from residues 402-498 of the human high polymer quininogen L-chain. It was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                         Cell adhesion inhibiting peptide(s), used as cancer metastasis inhibitor - comprises partial amino acid sequence of human high polymer quininogen {\tt L} chain
                                                                                                                                                                                                                                                                                                                                                                                                           04-FEB-1997
                                               Sequence
                                                                                                                  Example; Page 8; 14pp; Japanese
                                                                                                                                                                                           WPI; 1996-421988/42
                                                                                                                                                                                                                (SUMU ) SUMITOMO SEIYAKU KK
                                                                                                                                                                                                                                          28-SEP-1994;
                                                                                                                                                                                                                                                                 28-SEP-1995;
                                                                                                                                                                                                                                                                                                             JP08208692-A.
                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                             Human; high polymer; quininogen; L-chain
                                                                                                                                                                                                                                                                                                                                                                                   Human high polymer quininogen L-chain derived peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW07627;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW07627 standard; peptide; 17 AA
                                                                                                                                                                                                                                                                                        13-AUG-1996
                                                17
                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                AA;
                                                                                                                                                                                                                                          94JP-0259451
                                                                                                                                                                                                                                                               95JP-0276418
 100.0%;
 Score
Pred.
 No.
 DB 17;
2.1e-05;
           Length 17,
```

Ĭ

밁 δÃ

hgheqqhg1ghg

1 HGHEQQHGLGHG 12

0

```
RESULT
AAY81996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  XXXX
                                                                                PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PΕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PDXXXXXXX
                                                                                                                          The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kb glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HK) by plasma kallikrein. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                Query Match
Best Local Similarity
 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                    A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY81996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY81996 standard; peptide; 28
                                                                                                                                                                                                                                                                                                                                                                          Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2000-376483/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200027866-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human high molecular weight kininogen domain 5 fragment #5
                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hgheqqhglghg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                нснеоонстенс 12
                                                                                                                                                                                                                                                                                                                                                                      8; Page 28; 52pp;
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                28 AA;
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0107833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15
               100.0%; Score 75; DB 21; 100.0%; Pred. No. 3.5e-05;
                                                                                                                                                                                                                                                                                                                                                                      English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
0,
                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
Gaps
```

밁 Qy

<u>بـــ</u>

hgheqqhglghg 12

N

1 HGHEQQHGLGHG 12

Query Match Best Local 9

Similarity

100.0%;

Score 75; Pred. No. Mismatches

1.5e-05; DB 21; 0;

Length 12;

Indels

0;

Gaps

0;

Conservative

0,

Sequence

12

AA;

phase synthesis methods.

Matches

XXXXXXXXX

```
RESULT
AAY93348
                                                                                                                                                                                                                                                               DXXXX
                                                                                                                                                                     Ω
                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
AAY93346
                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                   The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
Light chain of human high molecular weight kininogen analogue
                           04-SEP-2000
                                                      AAY93348
                                                                              AAY93348 standard; peptide;
                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93346 standard; peptide;
                                                                                                                                                                                                 Local Similarity hes 12; Conserv
                                                                                                                                                26
                                                                                                                                                          1 HGHEQQHGLGHG 12
                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens.
                                                                                                                                             hgheqqhglghg 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ) DUPONT PHARM CO.
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 36;
                                                                                                                                                                                                                                                                55
                                                                                                                                                                                               100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                           (first entry)
                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             English.
                                                                              62
                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         55
                                                                                                                                                                                                           Score 75; DB 21
Pred. No. 7e-05;
                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                      21;
                                                                                                                                                                                                 0
                                                                                                                                                                                                                        Length
                                                                                                                                                                                                 Indels
                                                                                                                                                                                                 0
                                                                                                                                                                                              Gaps
                                                                                                                                                                                               0
```

Homo sapiens

28-MAR-1995 JP07082172-A high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; bovine; growth promotion; fibroblast.

Partial peptide of human HMW kininogen fragment

05-DEC-1995 AAR75186;

(first entry)

AAR75186 standard; peptide;

63

A

σ

Qγ 밁

5 hgheqqhglghg

16

```
Matches
                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                     The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight with a compound containing high molecular weight the interest of the invention.
                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                           kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also used for inhibiting angiogenesis. The compounds can also be used inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 6; Page 37; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       domo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COLM/)
                                                         Local Similarity es 12; Conserv
1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DUPONT PHARM CO. COLMAN W R.
                                                100.0%;
nilarity 100.0%;
Conservative 0;
                                                                                                                                                                                                        62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mousa AS
                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US26377.
                                                            0
                                                   Score 75; DB Z1;
Pred. No. 7.9e-05;
Pred-matches 0;
                                                                                                                Length 62;
                                                         Indels
                                                         .
0;
                                                      Gaps
                                                         0;
```

PA

PΑ

PRX

PXX

```
CCXXXX PPTT PXXX PXXX PXXX PXXX PTXXX PTXXX PTXXX PTXXX PTXXX PTXXX PXXX PXX PXXX PXX PXXX PXX PXXX PXX PXXX PXX PXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
AAY93347
ID AAY9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                           Claim 5;
                                                                                   Method for inhibiting endothelial cell proliferation, that inhibit endothelial cell migration \,
                                                                                                                                                           WPI; 2000-376306/32
                                                                                                                                                                                                                                                                         (UTEM )
(DUPO )
(COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        have
                                                                                                                                                                                                      Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        prasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                    09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93347 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR75186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                   (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 HGHEQQHGLGHG 12
|||||||||||
| 6 hgheqqhglghg 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                186 is a partial peptide corresponding to human kininogen ent 1, amino acids 458-520. Partial peptides of bovine and kininogen fragments 1.2, 1 and 2, are used in wound treating compsns. and act as the active component. The fragments are in yound treating because they have growth promotion activity
                                                                                                                                                                                                      WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          high
                                                                                                                                                                                                                                               ) DUPONT PHARM CO.
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12;
                                                                                                                                                                                                                                                                                                                         UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    treating agent contg. a partial peptide of kininogen owth promotion activity of fibroblasts.
                                           Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 AA;
                                                                                                                                                                                                    Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            molecular weight kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                        37; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             œ
(20
                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93JP-0230616.
                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptide; 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 75; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                light chain; analogue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                           using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          endothelial
                                                                                                              compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

The

present sequence represents an analogue of the light chain

O.f

human

inhibiting

endothelial cell

proliferation.

compounds

can also

```
RESULT
AAY93351
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   γ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 12
            The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for the containing high molecular weight kininogen analogues. The method and the compounds can be used for the containing high molecular weight kininogen analogues.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also used for inhibiting angiogenesis. The compounds can also be used inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                       Claim
                                                                                                                                                                                                                       Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\hspace{1pt}	ext{-}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                         WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                           Colman WR,
                                                                                                                                                                                                                                                                                                                                                                 (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                 (UTEM ) UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY93351 standard; peptide; 94
                                                                                                                                                                                                                                                                                                                                                                                                                                     10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                               (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hgheqqhglghg
                                                                                                                                                                                      8; Page 39; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                                                                                                                                                                                                                                            DUPONT PHARM CO.
COLMAN W R.
MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83 AA;
                                                                                                                                                                                                                                                                                                           Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100
                                                                                                                                                                                      English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 0 %
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 21;
0.00011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           can also be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
Fri Jul 6 09:47:57 2001
```

```
RESULT 1
AAY93349
ID AAY9
XX
AC AAY9
XX
AC AAY9
XX
AC AAY9
                                                                                                                                                                                                 RESULT
AAR75181
ID AAR
                                                                                                 Вþ
                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SXCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                         Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                            AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compons. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
 04-SEP-2000
                      AAY93349;
                                          AAY93349 standard; peptide; 186 AA
                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                   WPI; 1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                              17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                       28-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           used for inhibiting angiogenesis. The compounds can also be inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                        (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 high molecular weight; kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Partial peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR75181 standard;
                                                                                                 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26 hgheqqhglghg 37
                                                                                                                                                                                                                    fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HGHEQQHGLGHG 12
                                                                                             9
                                                                                                                                                                                                                                                                                             Page
                                                                                                                                                                                              131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94
                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AA;
                                                                                                                                                                                                                                                                                             7; 8pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     weight; kininogen; fragment; 1.2; 1; 2; partial;
agent; human; growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                             93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                  93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of.
                                                                                                                    12
                                                                                                 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human HMW kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    peptide; 131 AA
                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                             Japanese.
                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                         Score 75; DB 16;
Pred. No. 0.00017;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 75; DB 21;
Pred. No. 0.00012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fragment
                                                                                                                                                                                                                              growth promotion activity
                                                                                                                                                              Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     used
                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6
                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
```

```
8×333333333333333X8
                                                                                                                                                                                                                                                                                                                                                                  XPTXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X P X X
                                                                                      The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                       Sequence
                                                                                                                                                                                                                                                                                                                                            Claim
                                                                                                                                                                                                                                                                                                                                                                                  Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration \,
                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sapiens.
                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                            Page 38; 41pp; English
                                                         186 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US26377.
Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                      compound
```

```
Вþ
                                               Ş
AAY93342
                                                                 Matches
                                                                        Query Match
Best Local Similarity
                                5 hgheqqhglghg 16
                                                 \vdash
                                                 HGHEQQHGLGHG
                                                                12;
                                                                 Conservative
                                                12
                                                                        100.0%;
                                                                 0;
                                                                        Score 75; DB 21; Pred. No. 0.00024;
                                                                  Mismatches
                                                                  0
                                                                 Indels
                                                                0,
                                                                Gaps
                                                                0;
```

Homo sapiens

AAY93342; 04-SEP-2000

(first entry)

AAY93342 standard;

protein;

255

Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.

Light chain of human high molecular weight kininogen.

WO200027415-A2

```
RESULT 1
AAY93350
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present sequence represents the light chain of human high molecular weight Kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting anglogenesis. The compounds can also be used to inhibit method and such that the compounds can also be used to inhibit method and such that is the compounds can also be used to inhibit method.
                                                      09-NOV-1999;
                                                                                                                                          Homo
                                                                                                                                                                        Human; high molecular weight kininogen; glycoprotein; endotnerrar cerr, plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell migration; vitronectin.
(UTEM ) UNIV TEMPLE
                            10-NOV-1998;
                                                                                   18-MAY-2000.
                                                                                                               WO200027415-A2
                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                      Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                    04-SEP-2000
                                                                                                                                                                                                                                                                                                AAY93350;
                                                                                                                                                                                                                                                                                                                        AAY93350 standard; peptide; 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                         74
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                    12
                                                                                                                                        sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     255
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 3; 41pp; English
                                                                                                                                                                                                                                                                   (first entry)
                            98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ΑA;
                                                        99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                            85
                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of
                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 75; DB 21; Pred. No. 0.00033;
                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
PR PA PA PA PA PA PA PA PA PA PA
                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PA
PA
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting
                                                                                                                                                                                                                                                                                                                Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also used for inhibiting angiogenesis. The compounds can also be used to
                         (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                              09-NOV-1999;
                                                                                                                                                                                      WO200027415-A2
                                                                                                                                                                                                                                                                                          Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                      04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93343 standard; peptide; 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 7;
                                                                                                 10-NOV-1998;
                                                                                                                                                          18-MAY-2000
                                                                                                                                                                                                                                Misc-difference
                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                       Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
nes 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 hgheqqhglgh 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DUPONT PHARM CO. COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOUSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           39;
                                                                                                 98US-0107844.
                                                                                                                              99WO-US26377.
                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                 /note= "Xaa are unspecified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 21; 1
0.00016;
                                                                                                                                                                                                               amino acids"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  can also be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cells,
```

0

Colman

WR,

Mousa AS

WPI; 2000-376306/32

0

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR75180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 11;
                                            AAR75179 is a partial peptide corresponding to bovine kininogen fragment 2, amino acids 456-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                              Claim 6;
                                                                                                                                                                                                                                                                                                 17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                   JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR75180 standard; peptide; 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotean which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit more angiogenesis. The compounds can also be used to inhibit more proportional cells and the compounds can be used to inhibit more compounds can also be used to inhibit more compounds.
                                on fibroblasts.
                                                                                                                                                                                                                                 WPI; 1995-158909/21
                                                                                                                                                                                                                                                                                                                                 17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                  28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                               high molecular weight; kininogen; fragment; 1.2; 1; wound treating agent; bovine; growth promotion; fib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                               nave
                                                                                                                                                                                                                                                                (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Partial peptide of HMW kininogen fragment 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR75180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    171
                                                                                                                                                                          wound treating agent contg. a partial peptide of kininogen ave growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 HGHEQQHGLGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hgheqqhglgh 181
                                                                                                                                             Page 7; 8pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Page 34-35; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA,
                                                                                                                                                                                                                                                                                                 93JP-0230616
                                                                                                                                                                                                                                                                                                                                 93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 92.0%;
100.0%;
                                                                                                                                                                                                                                                                X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21;
0.002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; 1; 2; partial; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
```

Sequence

41

A

Search completed: Job time: 122 sec

July

6

2001,

09:09:16

```
RESULT 1
AAR75178
                   Qy
  밁
                                                                                              SXCCCCCXXXX PTXXX
                                                                                                                                                                                                                                                                              PR
                                                                                                                                                                                                                                                                                                                                  PD XXX FT
                                                                                                                                                                                                                                                                                                                                                                                                         TT
                                                                                                                                                                                                                                                                                                                                                                                                                              FH XXX XXX DEX XXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                    Query Match
Best Local
                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                          AAR75178 is a partial peptide corresponding to bovine kininogen fragment 1.2, amino acids 387-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compons. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                              Sequence
                                                                                                                                                                                            Claim 4;
                                                                                                                                                                                                              A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                             WPI; 1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                    Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                         Misc-difference
                                                                                                                   on fibroblasts.
                                                                                                                                                                                                                                                                                          17-SEP-1993;
                                                                                                                                                                                                                                                                                                            17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                  28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                     JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 high molecular weight; kininogen; fragment; 1.2; wound treating agent; bovine; growth promotion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Partial peptide of HMW kininogen fragment 1.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR75178
                                                                                                                                                                                                                                                                  (FARH ) HOECHST JAPAN KK
  75
                                          Local Similarity
les 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15
           1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6 hghqkqhglghg 17
hghqkqhg1ghg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10;
                                                                                                                                                                                           Page 6; 8pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  standard;
                                                                                              110 AA;
                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                         93JP-0230616
                                                                                                                                                                                                                                                                                                           93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                      69
                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                        /label= Lys or
                                                                                                                                                                                                                                                                                                                                                                                             'label= Val or Leu
                     12
                                                                                                                                                                                                                                                                                                                                                                                                                   'label=
 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                     90.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90.7%;
                                                    .3e;
                                                                                                                                                                                                                                                                                                                                                                                                                   Pro,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110
                                                                                                                                                                                                                                                                                                                                                                                                                   Thr
                                                    Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                         Arg
                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 16;
0.00059;
                                                               DB
                                                  .0016;
                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; 1; 2; partial; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 41;
                                                           Length 110;
                                          Indels
                                                                                                                           promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein -
                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BB BB
                                                                                                                                                                                                                                                                                   Score
  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length:
length:
                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                        Issued_Patents_AA:*

1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*

2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*

3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*

4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*

5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*

6: /cgn2_6/ptodata/2/iaa/backfiles1.pep:*
  July 6, 2001, 09:07:14; Search time 56.74 Seconds (without alignments) 4.260 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  193259 seqs, 20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-437-912-1
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000000000
 DВ
US-08-450-945-67
US-08-976-161-67
US-08-553-703A-2
US-09-006-021-2
US-09-006-021-3
US-09-006-021-3
US-09-206-337-8
US-09-206-337-8
US-09-205-680A-7
US-09-205-680A-7
US-09-205-457-1
US-09-115-032-1
US-09-115-032-1
US-09-115-032-1
US-09-115-032-1
US-09-115-032-1
US-09-115-032-1
US-08-488-161-73
US-08-488-161-73
US-08-98-168-73
US-08-98-168-73
US-08-98-168-73
US-08-98-100-79-79-706A-2
US-08-98-64-79B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
US-08-396-479B-10
                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SW
                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   model
                                                                                                                                                                                                                                                                                   Description
                                                Sequence
Sequence
Sequence
Sequence
                                                                                       Sequence
Sequence
Sequence
Sequence
                                                                                                                                         Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                 Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
 Sequence
Sequence
                    Sequence
Sequence
                                         Sequence
                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                              Sequence
                             2, Appli
3, Appli
8, Appli
8, Appli
7, Appli
7, Appli
1, Appli
2, Appli
73, Appli
74, Appli
75, Appli
76, Appli
77, Appli
            밁
                             Q
                                                   Matches
```

Result No.

61

HSLQERRGLGHG HGHEQQHGLGHG

72 12

0;

Query Match 53.3%; Score 40; DB 1; Length 1 Best Local Similarity 50.0%; Pred. No. 25; Matches 6; Conservative 3; Mismatches 3; Indel	US-08-450-945-67 US-08-450-945-67 US-08-450-945-67 US-08-450-945-67 Sequence 67, Application US/08450945 Patent No. 5783383 GENERAL INFORMATION: APPLICANT: KONGO, KAZUNİICO APPLICANT: KONGO, KAZUNİICO APPLICANT: KONGO, KAZUNİICO APPLICANT: KONGO, KAZUNİICO APPLICANT: KONGOLIK, EĞWART S. Jr. TITLE OF INVENTION: OF CYTOMEGALOVIRUS NUMBER OF SEQUENCES: 75 CORRESPONDENCE ADDRESS: ADDRESSEE: Dehlinger & Associates STREET: 350 Cambridge Avenue, Suite 250 CITY: Palo Alto CITY: Palo Alto CITY: Palo Alto STATE: CA COUNTRY: USA ZIP: 94306 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER READABLE FORM: MEDIUM TYPE: PALOSYMS-DOS SOFTWARE: PALORALION DATA: APPLICATION NUMBER: US/08/450,945 FILING DATE: 23-MAY-1995 CLASSIFICATION NUMBER: US/08/450,945 FILING DATE: 23-MAY-1995 CLASSIFICATION NUMBER: 38,615 REGISTRATION NUMBER: 38,615 REGISTRATION NUMBER: 38,615 REFERENCE/DOCKET NUMBER: 8600-0157 TELECOMMUNICATION: 424 ATTORNEY/ACENT INFORMATION: TELEPHONE: (415) 324-0860 INFORMATION FOR SEQ ID NO: 67: SEQUENCE CHARACTERISTICS: LENGTH: 154 amino acids TYPE: amino acids TYPE: amino acids TYPE: Protein US-08-450-945-67	. ALIGNMENTS	28 36 48.0 1075 5 PCT-US94-07297-41 29 36 48.0 1250 1 US-08-441-139-9 30 35 46.7 64 1 US-08-200-016-6 31 35 46.7 109 1 US-08-985-241-3 32 35 46.7 114 1 US-08-385-241-3 33 35 46.7 347 1 US-07-637-870-5 34 35 46.7 347 1 US-07-637-399-8 35 46.7 348 1 US-07-637-399-8 36 35 46.7 348 1 US-07-637-399-8 37 35 46.7 348 1 US-07-637-399-9 38 35 46.7 387 1 US-07-637-399-9 39 35 46.7 387 1 US-07-637-399-9 40 35 46.7 387 1 US-07-637-399-9 41 35 46.7 388 1 US-07-637-399-7 42 35 46.7 388 1 US-07-637-399-7 43 35 46.7 388 1 US-07-637-399-7 43 35 46.7 388 1 US-07-637-399-7 44 35 46.7 388 1 US-07-637-399-7 45 35 46.7 388 1 US-07-637-399-7 46 35 46.7 388 1 US-07-637-399-7 47 38 46.7 38 1 US-07-637-399-7 48 35 46.7 38 1 US-07-637-399-7 49 35 46.7 38 1 US-07-637-399-7 40 35 46.7 38 1 US-07-637-399-7 41 35 46.7 38 1 US-07-637-399-7 42 35 46.7 38 1 US-07-637-399-7 43 35 46.7 38 1 US-07-637-399-7 44 35 46.7 38 1 US-07-640-476-7
154; els			Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence
0; g			
Gaps			41, Appli 6, Appli 6, Appli 3, Appli 5, Appli 10, Appli 8, Appli 8, Appli 9, Appli 9, Appli 9, Appli 12, Appli 12, Appli 9, Appli 9, Appli 9, Appli 9, Appli 17, Appli
0			

```
Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
6; Conserve
                                                                                                                                                                                                                                                                                                              US-08-553-703A-2
                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-976-161-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , MOLECULE TYPE: protein US-08-976-161-67
                                                                                                                                                                                                                                                                        Sequence 2, Application US/08553703A Patent No. 5795767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              atent No. 6174...
atent No. 6174...
atent No. 6174...
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: MOCAISKI, Edward S. Jr.
APPLICANT: MOCAISKI, Edward S. Jr.
APPLICANT: MOCAISKI, Edward S. Jr.
APPLICANT: MOCAISKI, Edward S. Jr.
APPLICANT: MOCAISKI, Edward S. Jr.
APPLICANT: OF CYTOMEGALOVIRUS
TS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 67, Application US/08976161 Patent No. 6194542
                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (415) 324-0880
TELEFAX: (415) 324-0960
INFORMATION FOR SEQ ID NO: 67
COMPUTER READABLE FORM
                                                                                                                                                    APPLICANT: MARU, ISAFUMI
APPLICANT: OHTA, YASUHIRO
APPLICANT: TSUKADA, YOJI
TITLE OF INVENTION: EPIMERASE
NUMBER OF SEQUENCES: 9
                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patenth Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 154 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Sholtz, Charles K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                    COUNTRY: UZIP: 92660
                                                                                          ADDRESSEE: Knobbe, Martens, Olson & Bear STREET: 620 Newport Center Drive 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Sholtz, Charles K.
REGISTRATION NUMBER: 38,615
REFERENCE/DOCKET NUMBER: 8600-0157
                                                                                                                                                                                                                                                                                                                                                                                      61 HSLQERRGLGHG 72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 350 Camb
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                          1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94306
                                                                        Newport Beach
                                                        CA
                                      U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          350 Cambridge Avenue, Suite 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Dehlinger & Associates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/450,945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/976,161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-006-021-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-553-703A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/09006021 Patent No. 5994105
           PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/553,703

FILING DATE: 30 NOV-1995

ATTORNEY/AGENT INFORMATION:

NAME: Altman, Daniel E

REGISTRATION NUMBER: 34,115

REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS
                                                                                                                                                                     OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                     COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: MARU, ISAFUMI
APPLICANT: OHTA, YASUHIRO
APPLICANT: TSUKADA, YOJI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 30-NOV-CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
ELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                  COUNTRY: UZIP: 92660
                                                                                                                                                                                                                                                                                                 ADDRESSEE: Knobbe, Martens, Olson
STREET: 620 Newport Center Drive
CITY: Newport Beach
STATE: CA
                                                                                                                         CLASSIFICATION:
                                                                                                                                           FILING DATE:
                                                                                                                                                       APPLICATION NUMBER: US/09/006,02
                                                                                                                                                                                                                        COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: /1*
TELEPHONE: /1*
714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29 HSHDQEHG 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ненероне 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    417 amino acids
                                                                                                                                                                                                                                                                                                                                                                                          TSUKADA, YOJI
VENTION: EPIMERASE
                                                                                                                                                                                                                                                                                  U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                     IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                              Knobbe, Martens, Olson & Bear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IBM Compatible
                                                                                                                                                                                                                                      Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/553,703A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
```

0,

Gaps

```
; TOPOLOGY: lir
; MOLECULE TYPE:
; FRAGMENT TYPE:
US-09-006-021-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                        US-08-553-703A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-553-703A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity oz...
5; Conservative
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 3, Applic Patent No. 5795767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                        INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: OHTA, YASUHIRO APPLICANT: TSUKADA
                                                                       MOLECULE TYPE: FRAGMENT TYPE:
                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 714-760-0404
                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Altman, Daniel E
REGISTRATION NUMBER: 34,115
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/553,703A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: Knobbe, Martens, Olson & Bear
STREET: 620 Newport Center Drive 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: TSUKADA, YOJI
TITLE OF INVENTION: EPIMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: U.
ZIP: 92660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 417 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                 TELEPHONE: 714-760-04
TELEFAX: 714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Newport Beach
STATE: CA
                                                                                                   TOPOLOGY:
                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29 HSHDQEHG 36
                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 30-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 714-760-0404
TELEFAX: 714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 HGHEQQHG 8
                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08553703A
                                                                                                                                      419 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                   linear
                                                                       peptide
N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         peptide
N-terminal
                                                                                                             single
                                                                                                                                                                                                                                                                                                                                                                                                                  DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  52.0%;
 52.0%;
62.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 39; DB Pred. No. 95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
 DB 1;
95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
              Length 419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
밁
                                                                                                                                                                                                                        Query Match
Best Local Similarity
Thes 5; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                            RESULT 7
US-08-845-998-8
                                                                                                                                                                                                                                                                                                                           US-09-006-021-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 6
US-09-006-021-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                              Sequence 8, Application US/08845998 Patent No. 5879892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 3, Applica Patent No. 5994105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                 GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/553,703
FILING DATE: 30-NOV-1995
ATTORNEY/AGENT INFORMATION:
NAME: Altman, Daniel E
REGISTRATION NUMBER: 34,115
REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 714-760-0404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: U.S.A.
ZIP: 92660
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                               APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MERAL INFO...
APPLICANT: MARU, ISAFUMI
APPLICANT: OHTA, YASUHIRO
APPLICANT: TSUKADA, YOJI
APPLICANT: TNUENTION: EPIMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ Version 1.5
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/006,021
                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: peptide FRAGMENT TYPE: N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 419 amino acids
   APPLICANT:
                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                             29 HSHDQEHG 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS: sir
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 714-760-04
TELEFAX: 714-760-9502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Newport Beach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Knobbe, Martens, Olson & Bear STREET: 620 Newport Center Drive 16th Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29 HSHDQEHG
                                                                                                                                                                                                         1 HGHEQQHG 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 HGHEQQHG
                                                                 INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Application US/09006021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CA
Van Baren, Nicolas
Coulie, Pierre G.
De Smet, Charles
Lucas, Sophie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PE: Diskette
IBM Compatible
SYSTEM: DOS
                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                                                                                                                          52.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                          Score 39; DB Pred. No. 95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۳.
                                                                                                                                                                                                                                                                       Length 419;
                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

0;

APPLICATION NUMBER:

08/845,998

```
Query Match
Best Local Similarity
"~+~hes 6; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-845-998-8
                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-206-537-8
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 8,
                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Van Ba
                                                                                                                                                                                                                                                                                                                                                                                                          tent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (617)720-2441 INFORMATION FOR SEQ ID NO: 8:
                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Flopy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: Patentin Release #1.0, Version
                                                                CURRENT APPLICATION DATA:
                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Wolf, Greenfield & Sacks, P.C.
STREET: 600 Atlantic Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/845,998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: BOON, Thierry
TITLE OF INVENTION: LEUKEMIA ASSOCIATED GENES
TUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wolf, Greenfield & Sacks, P.C.
                                                                                                                                                                                                                                                                          TITLE OF INVENTION: LEUKEMIA ASSOCIATED GENES NUMBER OF SEQUENCES: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 420 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: (617)720-3500
PRIOR APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION: NAME: Van Amsterdam, Joh
                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      189 НРНРНМНЅІСН 199
               FILING DATE: CLASSIFICATION:
                                                                                                                                                             COUNTRY: US
ZIP: 02210
                                                                                                                                                                                                         STREET: 600 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET: 600 A
                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Van Amsterdam, John R. REGISTRATION NUMBER: 40,212 REFERENCE/DOCKET NUMBER: L04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: US
ZIP: 02210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 HGHEQQHGLGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                             ΜA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MA
                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/09206537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600 Atlantic Avenue
                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                     Lucas, Sophie
Boon, Thierry
                                                                                                                                                                                                                                                                                                                                     Coulie, Pierre G.
De Smet, Charles
                                                                                                                                                                                                                                                                                                                                                                          Van Baren, Nicolas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Floppy disk
                                                                                                                                                                                                                                                                                                                       Sophie
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52.0%;
54.5%;
                                             us/09/206,537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L0461/7008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TOPOLOGY: linear; MOLECULE TYPE: protein US-09-206-537-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
US-08-918-727-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Patent No.
GENERAL IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
APPLICANT:
                                                                                                                      NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE, DOCKET NUMBER: PF.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650.855-0555
                                                                                                                                                                                                                                              OPERATING SYSTEM: FOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/918,727
FILING DATE: Herewith
CLASSIFICATION 435
PRIOR APPLICATION DATA:
                                                            SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                     FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Shah, PUTV1
TITLE OF INVENTION: HUMAN S100 PROTEINS
NUMBER OF SEQUENCES: 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 420 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (617)720-3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
ZIP: 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 189 НРНРНМНЅІСН 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                              TELEPHONE: 650-845-4166
              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match 52.0%;
Local Similarity 54.5%;
                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Incyte Pharmaceuticals, Inc STREET: 3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE:
                                             CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 HGHEQQHGLGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                        94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                     CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Application US/08918727
                                          113 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Hillman, Jennifer L.
Bandman, Olga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lal, Preeti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bandman, Olga
Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (617)720-2441
(777 TD NO: 8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
linear
                                                                                                                                                                                                                                                                                                                                                      IBM Compatible
              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L0461/7008
                                                                                                                                                        PF-0373 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
망
                      Š
                                                                                                                    US-09-205-680A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-918-727-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-205-680A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
"~+~hes 6; Conserv
                                                                Query Match
Best Local
                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 7, Applic Patent No. 6103497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                   NAME: Colette C. Muenzen
REGISTRATION NUMBER: 39,784
REFERENCE/DOCKET NUMBER: PF-0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
TELEFAX: 650-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION: 530 PRIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/205,680A FILING DATE: Herewith
                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS
                                                                                                                                                            IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Lal, Pr
APPLICANT: Shah, P
TITLE OF INVENTION:
102 GHDHRHGKGCG 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    102 GHDHRHGKGCG 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM Com
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 3174 Por CITY: Palo Alto
                                                    Local Similarity
les 6; Conserv
                                                                                                                                                                          TOPOLOGY:
                                                                                                                                 LIBRARY: GenBank
CLONE: 488157
                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 GHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIBRARY: GenBank
                       2 GHEQQHGLGHG 12
                                                                                                                                                                                                                 ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94304
                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Application US/09205680A
                                                                                                                                                                                                              113 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          488157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: Incyte Pharmaceuticals, Inc
3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lal, Preeti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bandman, Olga
Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                    Conservative
                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                     Herewith
                                                                                                                                                                                       single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Purvi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50.7%;
                                                                50.7%;
                                                                                                                                                                                                                                                                                                             PF-0373 US
                                                               Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                    Mismatches
                                                               DB 3;
36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
36;
                                                                            Length 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 113;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
```

```
; SEQ ID NO 1
; LENGTH: 286
; TYPE: PRT
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-203-716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-255-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
US-09-203-716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Crooke, Stanley T.
APPLICANT: Lima, Walter F.
APPLICANT: Wu, Hongjiang
TITLE OF INVENTION: Human RNase H Compositions and Uses Thereof
FILE REFERENCE: ISPH-0333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/08255457 Patent No. 5780040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1, Application US/09203716 Patent No. 6001653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/09/203,716 CURRENT FILING DATE: 1998-12-02 EARLIER APPLICATION NUMBER: 60/067,458 EARLIER FILING DATE: 1997-12-04 NUMBER OF SEQ ID NOS: 12 SOFTWARE: Patentin Ver. 2.0
                                      TELEX: 200154
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                              TELECOMMUNICATION INFORMATION: TELEPHONE: (617) 542-5070
                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul C.
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 00
                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Plaut, Andrew G
APPLICANT: Gilbert-Rothste
APPLICANT: Wright, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                          TELEFAX: (v-
TELEFAX: 200154
                                                                                                                                                                                                                                                                                                                                                                                        STATE: Massachusetts
COUNTRY: U.S.A.
ZIP: 02110-2804
                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/255,457 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Boston
STATE: Massac
                                                                                            TELEPHONE:
                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82 GHENQHG 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 GHEQQHG 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gilbert-Rothstein, Joanne V.
                                                                        (617) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Fish & Richardson
                                                                                                                                                                                                                 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HELICOBACTER PYLORI NICKEL BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50.7%;
85.7%;
                                                                                                                                    00398/090001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
RESULT 14
PCT-US95-05772-1
                                                                                         В
                                                                                                                  QY
                                                                                                                                                                                                                            ; TOPOLOGY: 11; MOLECULE TYPE: US-09-115-032-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: protein US-08-255-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-115-032-1
Sequence 1, Application PC/TUS9505772 GENERAL INFORMATION:
                                                                                                                                              Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1,
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                    TELEFAX: (617) 542-890
TELEX: 200154
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                NAME: Clark, Paul C.
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 00398/090001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
TELEFAX: (617) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/115,032
                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER.OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Gilbert-Rothste APPLICANT: Wright, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
CITY: E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: U.S.A
                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                     3 HEQQHGLGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ||:||| ||
4 HEEQHG-GH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 HEQQHGLGH 11
                                                                                                                                                                                                                                                                          amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Application US/09115032
                                                                                                                                                                                                                                                                                        60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gilbert-Rothstein, Joanne V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plaut, Andrew G.
                                                                                                                                                                                                                                            protein
                                                                                                                                                               50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50.0%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HELICOBACTER PYLORI NICKEL BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         08/255,457
                                                                                                                                                                                                                                                                                                                       <u>..</u>
                                                                                                                                                               Score 37.5;
Pred. No. 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 37.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                             DB 2; Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 60;
                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                Gaps
```

```
망
                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
US-07-945-283-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US95-05772-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEX: 200154
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino
                                                                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/07945283 Patent No. 5352596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                  GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul C.
REGISTRATION UNMBER: 30,162
REFERENCE/DOCKET NUMBER: 0039
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
TELEPHONE: (617) 542-8906
                                                                                                                                                                                                                                                                         APPLICANT: Cheung, A APPLICANT: Wesley, R TITLE OF INVENTION: TITLE OF INVENTION:
               COMPUTER READABLE FORM:
MEDIUM TYPE: F10ppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/945,283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM CC COMPATIBLE
COMPUTER: Floppy disk
COMPUTER: FOR COMPATIBLE
COMPUTER: FOR COMPATIBLE
COMPUTER: PATENTIA RELEASE #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Wright, Andrew TITLE OF INVENTION: HELICO TITLE OF INVENTION: BINDIN
                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                      COUNTRY: U
ZIP: 61604
                                                                                                                                                                      STATE:
                                                                                                                                                                                    STREET: 1815
CITY: Peoria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 225 1
CITY: Boston
FILING DATE:
                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 HEEQHG-GH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 HEQQHGLGH 11
                                                                                                                                                                                                                                                                                                                                               INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                      IL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Massachusetts
                                                                                                                                                                                                        E: Curtis
1815 No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Fish & Richardson
225 Franklin Street
                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plaut, Andrew G.
Gilbert-Rothstein, Joanne V.
                                                                                                                                                                                                                                                                                                             Cheung, Andrew K. Wesley, Ronald D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
   19920911
                                                                                                                                                                                                      s P. Ribando
5352596th University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HELICOBACTER PYLORI NICKEL BINDING PROTEIN
                                                                                                                                                                                                                                                                         Pseudorabies Virus Deletion Mutants Involving The EPO and LLT Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       50.0%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT/US95/05772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          00398/090001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 37.5;
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

1;

```
CLASSIFICATION: 424

ATTORNEY/AGENT INFORMATION:

NAME: Ribando, Curtis P

REGISTRATION NUMBER: 27976

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELEPHONE: 309-685-4011 ext.513

TELEPHONE: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4011 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-685-4012 ext.513

TELEPAX: 309-68
```

. 

Result No. Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries Minimum DB Maximum DB Total number of hits satisfying chosen parameters: Database Perfect score: Sequence: Scoring table: Title: OM protein - protein search, using sw model Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. Score 50 seq 50 50 49 49 49 length: 0 length: 2000000000 Query Match Length PIR\_68:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\* 100.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 900.00 BLOSUM62 219241 seqs, 76174552 residues Gapop 10.0 , Gapext 0.5 1 HGHEQQHGLGHG 12 US-09-437-912-1 75 July GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd 6, 2001, 09:07:14; search time 73.59 Seconds (without alignments) 12.421 Million cell updates/sec DВ T45059 A43742 S58327 S66149 ij KGHUH1 SUMMARIES 219241 ATP/GTP-binding pr cold stress protei gene gene hypothetical nypothetical prote hemolymph antifung major acute phase K-kininogen, LMW peptidyl-prolyl hypothetical probable zinc tran kininogen, HMW I K-kininogen, kininogen, kininogen, Description nypothetical prote kininogen, pipsqueak pro pipsqueak pro C-8 protein etical prote sterile hom MMH prote C.

RESULT KGHUH1 kininogen kinkerna N; Alterna		44 45	43	42	41	40	39	38	37	36	35	34	33	32	31	30
1 , HMW I te name		4 2 2 2	43	43	43	43	43.5	43.5	44	44	44	44	44	44	45	45
precursones: alpha		56.0 56.0	57.3	57.3	57.3	57.3	58.0	58.0	58.7	58.7	58.7	58.7	58.7	58.7	60.0	60.0
val 1-2-th		102 177	507	335	203	18	410	136	697	690	389	378	356	208	529	507
idat iol		20	N	N	N	N	N	2	Ν	N	2	N	N	N	Ŋ	N
RESULT 1  KININGEN, HMW precursor [validated] – human  kininogen, HMW precursor [validated] – human  kininogen, ames: alpha-2-thiol protecinase inhibit  N.Sontains: bradwinin (Validin I). HMW bininogen	ALIGNMENTS	T30119 S65780	D64575	D38532	T36240	B32473	T26757	JQ2266	T03834	Н69268	B96635	T49164	н71496	T07732	T08684	S54303
RESULT 1  KGHUH1  KGHUH1  Kininogen, HMW precursor [validated] – human  kininogen, ames: alpha-2-thiol proteinase inhibitor; preprokininogen;  N:Contains: bradykinin (kalidated) – human  N:Contains: bradykinin (kalidated)		hypothetical prot glycine/proline-r	hypothetical	hypB protein	hypothetical prote	histidine-rich pro	hypothetical prote	cold acclimation p	nuclear distributi	copper-transportin	hypothetical prote	zinc transporter-	probable aminopep	tuberisation-rela	hypothetical prote	zinc transport pro
prokininogen		prote ine-ri	prote	Rho	prote	ch pro	prote	tion p	ributi	portin	prote	rter-l	nopept	-relat	prote	rt pro

# C;Species: Homo sapiens (man) C;Jate: 28-May-1986 #sequence\_revision 28-May-1986 #text\_change 08-Dec-2000 C;Jate: 28-May-1986 #sequence\_revision 28-May-1986 #text\_change 08-Dec-2000 C;Accession: A01279; Ab25276; S32422; A91153; A24871; A27899; A27699; A31905; A34030; R;Ohkubo, I.; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M. Blochemistry 23, 5591-597, 1984 A;Title: Isolation of a human colNa for alpha-2-thiol proteinase inhibitor and its ide A;Reference number: A90490; MUID:85122621 A; Molecule type: mRNA A; Residues: 1-389 <OHK> N; Contains: bradykinin (kallidin I); HMW kininogen I; HMW kininogen II;

A;Molecule type: mRNA A;Residues: 1-592,'I',594-644 <TAK>. A;Residues: 1-592,'I',594-647, NID:9186751; PIDN:AAB59550.1; PID:9386852 A;Cross-references: GB:M1137; NID:9186751; PIDN:AAB59550.1; PID:9386852 R;Auerswald, E.A.; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I. FEBS Lett. 321, 93-97, 1993 A;Title: Cloning, expression and characterization of human kininogen domain A;Reference number: S32422; MUID:93223854 A;Accession: S32422 A; Accession: A25276 R;Takagaki, Y.; Kitamura, N.; Nakanishi, S. J. Biol. Chem. 260, 8601-8609, 1985 A;Title: Cloning and sequence analysis of cDNAs for A;Reference number: A92544; MUID:85234582 A;Cross-references: GB:K02566; NID:g177889 R;Takagaki, Y.; Kitamura, N.; Nakanishi, S human high molecular weight and

A; Molecule type: mRNA A; Residues: 'ANSM', 253-377 < AUE>

A;Note: differences are due to known cloning artifacts R;Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl, W. Eur. J. Biochem. 152, 307-314, 1985
A;Title: The amino acid sequence of the light chain of human high-molecular-mass kini A;Reference number: A91153; MUID:86030270
A;Accession: A91153

A; Accession. A; Accession A; Molecule type: protein A; Residues: 379-644 <LOT>
A; Residues: 379-644 <LOT>
A; Note: the bradykinin sequence preceding A; Note: the bradykinin sequence preceding R;Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W.
Eur. J. Biochem. 154, 471-478, 198
A;Title: Completion of the primary structure of human high-molecular-mass kininogen.
A;Reference number: A24871; MUID:86108361 receding the light chain sequence Henschen, A.; Mueller-Esterl, W. was not determined

A; Accession: A24871

accumulatio

prote prote prote

A; Molecule type: protein
A; Residues: 'Z', 20-380 <KEL1>

R;Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W. in Kinins IV, Greenbaum, L.M., and Margolius, H.S., ed., pp.85-89, Plenum Press, New A;Title: Amino acid sequence of the light chain of human high molecular mass kininoge A;Reference number: A27899

46.5

hypothetical

prote prote

hypothetical nypothetical hypothetical nypothetical nypothetical

```
A; Molecule type: protein
A; Residues: 379-389, 'K', 390-407, 'Q', 409-644 <KEL2>
R; Mindroiu, T.; Carretero, O.A.; Proud, D.; Walz, D.; Scicli,
Biochem. Biophys. Res. Commun. 152, 519-526, 1988
A; Title: A new kinin moiety in human plasma kininogens.
                                                                                                                                                                                                                                  A; Molecule type: protein
A; Residues: 450-452, 'X', 454, 'X', 456 <LIT>
R; Straczek, J.; Maachi, F.; le Nguyen, D.
FEBS Lett. 373, 207-211, 1995
A; Title: Purification from human plasma o
                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 264-359, 'N', 361-375 <LEN2>
R; Little; S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A; Title: Human mast cell tryptase isoforms:
A; Reference number: S55239; MUID:95251593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Lenarcic, B.; Krasovec, M.; Ritonja, A.;
FEBS Lett. 280, 211-215, 1991
A;Title: Inactivation of human cystatin C &
A;Reference number: S14303; MUID:91192133
A;Accession: S14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 381-389 < KART2>
A; Experimental source: urine
A; Note: this peptide had Pro-383 modified
A; Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Residues: 1-19;189-192;310-314;381-389 <LEN1>
R;Kato, H.; Matsumura, Y.; Maeda, H.
FEBS Lett. 232, 252-254, 1988
A;Title: Isolation and identification of hydroxyproline analogues of bradykinin A;Reference number: A61495; MUID:88211869
A;Accession: A61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok, Biol. Chem. Hoppe-Seyler 369, 257-261, 1988 A;Title: Human cathepsin B and cysteine proteinase inhibitors A;Reference number: S02482; MUID:89076517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Residues: 381-389 <MAE> R;Residues: 381-389 <MAE> R;Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K. Biochem. Biophys. Res. Commun. 150, 511-516, 1988 A;Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin released A;Reference number: A34030; MUID:88106632 A;Accession: A34030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number: A31905; A; Accession: A31905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: A27699; A; Accession: A27699
                                                                        R;Kitamura, N.; Kitagawa, H.; Fukushima, D.;
J. Biol. Chem. 260, 8610-8617, 1985
                                                                                                                             A; Molecule type: protein
A; Residues: 431-434 <STR>
                                                                                                                                                                                  A; Reference number: A; Accession: S68059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A; Accession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: protein A; Residues: 380-389 <SAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Purification and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: protein A; Residues: 380-389 < KAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Note: this peptide had Pro-383
A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Residues: 380-389 <MIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                           A; Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Molecule type: protein
Residues: 380-389 <KAT1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Molecule type:
                Structural organization of the human nce number: A92545; MUID:85234583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H.; Matsumura, Y.; Kato, H.
Chem. 263, 16051-16054, 1988
Purification and identification of [hydroxyprolyl(3)]bradykinin in ascitic fluince number: A31905; MUID:89034061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lype: protein
1-19;189-192;310-314;381-389 <LEN1>
annotation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                              S68059;
gene organization
                                                                                                                                                                                                              human plasma of a 
; MUID:96033974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MUID:88209021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modified to 4-hydroxyproline
                                                                                                                                                                                                                                                                                          D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   to 4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and kininogen by human cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Olafsson,
                                                                                                                                                                                                                                                                                       Becchi, M.; Heulin, M.H.; Nabet, P.;
                                                                                                                                                                                                                                                                                                                                                                                                                             separation and
                                                                                                    Takagaki, Y.; Miyata,
                                                                                                                                                                                                                                     tetrapeptide that
                                                  kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        I.; Turk,
                                               gene and a model for its evolut
                                                                                                                                                                                                                                                                                                                                                                                                                                examination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     M.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (CPIs) in
                                                                                                                                                                                                                                     potentiates
                                                                                                    T.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                             of substrate-spe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽.
                                                                                                                                                                                                                                        insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in
                                                                                                                                                                                                                                                                                             Bellevi
                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   humaı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ano
```

```
F;142-253/Domain: Cystatin homology <CY2>
F;264-375/Domain: Cystatin homology <CY2>
F;264-375/Domain: Cystatin homology <CY2>
F;380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <BDY>
F;381-389/Product: bradykinin (kallidin I) #status experimental <CH>
F;381-389/Product: bradykinin (kallidin I) #status experimental <CH>
F;381-389/Product: bradykinin (kallidin I) #status experimental <CH>
F;381-389/Product: bradykinin (kallidin I) #status experimental <CH>
F;390-644/Domain: HMW kininogen light chain #status experimental <ch>
Kristinin Kininogen light chain #status experimental </ch>
F;391-389/Product: low molecular weight growth promoting factor #status experimental </ch>
F;421-431/Product: low molecular weight growth promoting factor #status experimental </c>
F;431-434/Product: low molecular weight growth promoting factor #status experimental <ch>
F;431-434/Product: low molecular weight growth promoting factor #status experimental </ch>
F;431-434/Product: low molecular weight growth promoting factor #status experimental </ch>
F;431-434/Product: low molecular weight growth promoting #status experimental </c>
F;38-614,83-94,107-126,142-145,206-218,229-248,264-267,328-340,351-370/Disulfide bond </ch>
F;48/Binding site: carbohydrate (Asn) (covalent) #status experimental </cr>
F;383/Modified site: 4-hydroxyproline (Pro) (partial) #status experimental </cr>
F;383-90/Cleavage site: Arg-Ser (kallikrein) #status experimental </cr>
F;383-90/Cleavage site: Arg-Ser (kallikrein) #status experimental </c>
F;389-390/Cleavage site: Arg-Ser (kallikrein) #status experimental </cr>
F;389-390/Cleavage site: Arg-Ser (kallikrein) #status experimental </cr>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Contents: annotation; bradykinin
C;Comment: The HMW kininogen precursor and the LMW form are produced from the same ge
C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of
C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is i
C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator xyproline residue is present in the kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kininogen, HMW II precursor - bovine
W;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen
N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokininogen
C;Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999
C;Accession: A01282; A91923; A91941; A91938; B29559
R;Kitamura, N: Takagaki, Y:; Furuto, S:; Tanaka, T:; Nawa, H:; Nakanishi, S
Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;1-18/Domain: signal sequence #status experimental <SIG>
F;19-644/Product: HMW kininogen I (prokininogen) #status experimental <MAT1>
F;19-379,390-644/Product: HMW kininogen II #status experimental <MAT2>
F;19-379/Domain: HMW kininogen heavy chain #status experimental <HCH>
F;19-379/Domain: cystatin homology <CYI>
F;19-131/Domain: cystatin homology <CYI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Map position: 3q27-3q27
A;Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
C;Superfamily: kininogen; cystatin homology
C;Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor;
A; Molecule type: protein A; Residues: 376-391 < KAT>
                                                                                                                               R;Kato, H.; Nagasawa, S.; Suzuki, T.
J. Blochem. 67, 313-323, 1970
A;Title: Studies on the structure of bovine kininogen: cleavages of disulfide bonds
A;Reference number: A91923; MUID:70180420
                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-619 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: A single gene for bovine high molecular weight and A;Reference number: A93317; MUID:84014106 A;Accession: A01282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Gene: GDB: KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Title: Structural features of plasma kinins and kininogens A;Reference number: A91455; MUID:90255622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fed. Proc. 27, 52-57, A; Title: Structural fe
                                                                                        A; Accession: A91923
                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:V01492; GB:K01758; NID:g493; PIDN:CAA24736.1; PID:g494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;577/Binding site: carbohydrate (Ser) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HGHEQQHGLGHG 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ch 100.0%; l Similarity 100.0%; 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GDB:125256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OMIM: 228960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 75; DB Pred. No. 0.0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 0.00021; ches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T.; Nawa, H.; Nakanishi, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 644;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       molecular weight kini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

Iwanaga,

S

H

```
J. Biochem. 79, 1201-1222, A; Title: Primary structure A; Reference number: A91941 A; Accession: A91941 A; Molecule type: protein A; Residues: 387-455 < HAN>A; Note: 388-Pro, 401-Val, R; Han, Y.N.; Komiya, M.; I Biochem. 77, 55-68, 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Residues: 456-496 <HAZ>
A;Residues: 456-496 <HAZ>
R;Sueyoshi, T; Miyata, T; Hashimoto, N.; Kato, J. Biol. Chem. 262, 2768-2779, 1987
A;Title: Bovine high molecular weight kininogen. A;Reference number: A92627; MUID:87137530
A;Accession: B29559
A;Molecula ****
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            xyproline residue is present in the annual cystatin homology cysuperfamily: kininogen; cystatin homology cysuperfamily: kininogen; cystatin homology cysuperfamily: signal sequence; status predicted <SIC F;1-18/Domain: signal sequence status predicted <SIC F;1-18/Domain: who wininogen II status predicted to the status predicted signal sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Comment: The HMW kiningen precursor is produced from the same gene as the LMW form as C;Comment: Kiningen is a cysteine proteinase inhibitor, takes part in initiation of the C;Comment: The glycine/histidine/lysine-rich region of HMW kiningen light chain is important: Bradykinin, released from kiningen by kallikrein, is a potent vasodilator, is approximately provided by the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F:418-488/Region: glycine/histidine/lysine-rich
F:19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimen
F:27-589,82-93,106-125,141-144,205-217,288-247,261-264,325-337,348-367/Disulfide bonds:
F:47/Binding site: carbohydrate (Asn) (covalent) #status absent
F:87,168,169,204,280/Binding site: carbohydrate (Asn) (covalent) #status experimental
F:136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental
F:197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F:376-377/Cleavage site: Met-Lys (kallikrein) #status experimental
F:380/Modified site: 4-hydroxyproline (Pro) #status predicted
F:380/Modified site: 4-hydroxyproline (Pro) #status predicted
F:380/Modified site: 4-hydroxyproline (Pro) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;1-18/Domain: signal sequence #status predicted <SIG>
F;19-619/Product: HMW kininogen II #status predicted <MAT>
F;19-619/Product: HMW kininogen II #status predicted <MAT>
F;19-376/Product: HMW kininogen II heavy chain #status experimental <HCH>
F;19-130/Domain: cystatin homology <CYI>
F;19-130/Domain: cystatin homology <CYI>
F;261-372/Domain: cystatin homology <CYI>
F;261-372/Domain: cystatin homology <CYI>
F;261-372/Domain: cystatin homology <CYI>
F;377-386/Product: lysyl-bradykinin (kallidin II) #status experimental <HDDY>
F;378-386/Product: bradykinin (kallidin I) #status experimental <HDDY>
F;388-619/Product: HMW kininogen II light chain #status experimental <LCH>
F;388-619/Product: HMW kininogen II light chain #status experimental <LCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S. Seikagaku 56, 808, 1948
A;Title: Disulfide bonds in bovine HMW kininogens
A;Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030270 A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Title: Studies on the primary structure A; Reference number: A91938; MUID:75170265 A; Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Note: article in
밁
                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R; Lottspeich,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Molecule type: protein; Residues: '2',20-104,'E',106-256,'XX',257-376; Residues: 'E': Kellermann, J.; Henschen, A.;
                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                              86-387/Cleavage site: Arg-Ser (kallikrein) #status experimental 96,400,404,510/Binding site: carbohydrate (Ser) (covalent) #status experimental 97,398,518,522,534,546,551,568/Binding site: carbohydrate (Thr) (covalent) #sta 96-497/Cleavage site: Arg-Thr (kallikrein) #status experimental
461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochem. 152,
                                                                                                1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               398-Pro, 401-Val,
HGHQKQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  387-455 <HAN>
                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       structure
                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kellermann, J.; H
152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A91941;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and 455-Lys were also Iwanaga, S.; Suzuki, T.
                                                                                                                                                                                                                                        90.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MUID:76260155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             bovine plasma high-molecular-weight kininogen. The amino
                                                                                                                                                                                      2
                                                                                                                                                                                                                                        Score
Pred.
                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                        No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
f
                                                                                                                                                                                                                                        DB 1;
0.0026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bovine high-molecular-weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The amino acid sequence, positions of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H.; Hayashida, H.; Miyata, T.;
                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                      Length 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B.; Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      proteinase inhibitor; dup
                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (covalent) #status
                                                                                                                                                                                      Gaps
                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Iwanaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Α'n
```

RESULT

```
A; Molecule (1740) F. A; Residues: 458-498 (AAN)
A; Residues: 458-498 (AR)
R; Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, J. Biol. Chem. 262, 2768-2779, 1987
J. Biol. Chem. 262, 2768-2779, 1987
A; Title: Bovine high molecular weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                          F;1-18/Domain: signal sequence #status predicted <SIG>
F;19-621/Product: HMW prokininogen I #status predicted <MAT>
F;19-621/Product: HMW kininogen I heavy chain #status experimental <HCH>
F;19-39/Product: HMW kininogen I heavy chain #status experimental <HCH>
F;19-130/Domain: cystatin homology <CY1>
F;141-252/Domain: cystatin homology <CY2>
F;263-374/Domain: cystatin homology <CY3>
F;363-374/Domain: cystatin homology <CY3>
F;379-388/Product: lysyl-bradykinin (kallidin II) #status experimental <KBDY>
F;380-388/Product: bradykinin (kallidin I) #status experimental <CH>
F;380-388/Product: HMW kininogen I light chain #status experimental <LCH>
                                                             F;417-488/Region: glycine/histidine/lysine-rich
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experi
F;27-591.82-93.106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide bond
F;87,168,169,204/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental
F;197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F;378-379/Cleavage site: Met-Lys (kallikrein) #status experimental
F;388-379/Cleavage site: Met-Lys (kallikrein) #status experimental
F;388-379/Cleavage site: Met-Lys (kallikrein) #status predicted
F;382/Modified site: 4-hydroxyproline (Pro) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Comment: The HMW kininogen precursor is produced from the same gene as the LMW form C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is i C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: The amino acid sequence of the light chain of human A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohy R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S. Seikagaku 56, 808, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinin C;Species: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun C;Accession: A01281; A91923; A91938; A29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Superfamily: kininogen; cystatin homology
C;Keywords: alternative splicing; blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator xyproline residue is present in the kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Note: article
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: protein
A;Residues: 'Z',20-123,'I',125-127,'I',129-378 <SUE>
R:Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch,
Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A; Accession: A29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: Studies on the primary structure of bovine A; Reference number: A91938; MUID:75170265 A; Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R; Han, Y.N.; Komiya, M.; Iw:
J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues:
R; Han, Y.N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 378-393 < KAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: A91923; A; Accession: A91923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Kato, H.; Nagasawa, S.; Suzuki, J. Biochem. 67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:V01491; GB:K01757; NID:g491; PIDN:CAA24735.1; R;Kato, H.; Nagasawa, S.; Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-621 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: A single gene for bovine high molecular weight and low molecular weight kini A; Reference number: A93317; MUID: 84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Kitamura, N.; Takagaki, Y.; Furutó, S.; Tanaka, T.; Nawa, H.; Nakanishi, S. Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Contents: annotation; disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Disulfide bonds in bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Studies on the structure of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: A01281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kininogen, HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in Japanese
                                            Arg-Ser (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Iwanaga,
carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MUID:70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Suzuki,
    (Ser)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen: cleavages
    (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Η.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The amino acid sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   high-molecular-weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hayashida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 carbohydrate binding sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В.,
#status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     II; prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      high-molecular-mass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Η.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of disulfide
experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Miyata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PID: 9492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  positions o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bonds a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kini
```

```
R;Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, T.; Nakanishi, S.
J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution of the rat kininogen gene
A;Reference number: A92625; MUID:87137443
A;Recession: A25486
A;Molecule type: mRNA
A;Residues: 1-639 <KIT>
A;Note: the authors translated the codon CAA for residue 347 as Asn
C;Superfamily: kininogen; cystatin homology
C;Reywords: alternative splicing
F;1-18/Domain: signal sequence #status predicted <SIG>
F;19-639/Product: kininogen, HMM I #status predicted <MAT>
F;19-131/Domain: cystatin homology <CYI>
F;142-253/Domain: cystatin homology <CYI>
F;264-375/Domain: cystatin homology <CY3>
RESULT
                                                                                                                                                                                                                                                                     Qy
                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C:Species: Rattus norvegicus (Norway rat)
C:Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 15-Nov-1996
C:Accession: A25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R:Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, T.; Nakanishi, S. J. Biol. Chem. 262, 2190-2198, 1987
A:Title: Differing expression patterns and evolution of the rat kininogen gene family. A:Reference number: A92625; MUID:87137443
A:Accession: C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 30-Sep-1993
C;Accession: C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N; Contains:
C; Species: R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-264 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VΩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;399,400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) (covalent) \#status F;498-499/Cleavage site: Arg-Thr (kallikrein) \#status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kininogen, HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        K-kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C25486
                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Comment: The nucleotide; Superfamily: kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 HGHEQQHGLGHG 12
|||::||||||
463 HGHQKQHGLGHG 474
                                                                                                                                                                  450
                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity hes 9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
nes 10; Conserv
                                                                                                                                                                                                                                                                     1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 HGHEQQHGLGHG 12
6
                                                                                                                                                                  HGHQKPHGLGHG 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         нснокрнсьснс 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HMW precursor - rat (fragment)
                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                    82.7%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82.7%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               90.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence was obtained from GenBank, release cystatin homology % \left\{ 1\right\} =\left\{ 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             rat
                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ς.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 62; DB 2;
Pred. No. 0.0098;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 68; DB 1; Length 621; Pred. No. 0.0026;
                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
0.024;
                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene family.
                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     e)
                                                                                                                                                                                                                                                                                                                                                                                    RESULT
A27115
                                        R; Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
                                                                                                                                                 C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Mar-1989 #sequence_revision 31
C;Accession: A27115
                                                                                                                                                                                                                                                                                                                          major acute phase alpha-1 protein 1 - rat (fragments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Genetics:
```

A; Title:

and expression of the

genes

for major acute phase alpha-1-protein

31-Mar-1989 #text\_change 16-Jul-1999

```
Query Match
Best Local Similarity
~*~hes 8; Conserva
                                                                                                                                                                                                                                                                         A;Residues: 1-290 <FUN>
R;Kageyama, R; Kitamura, N.; Ohkubo, H.; Nakanishi, J. Biol. Chem. 262, 2345-2351, 1987
A;Title: Differing utilization of homologous transcri A;Reference number: A25488; MUID:87137465
A;Accession: A25488
                                                                                                                                                                                                                                                                                                                                                                                     R; Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
A; Title: Structure and expression of the genes
A; Reference number: A92653; MUID:87250580
A; Accession: C27115
A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Mar-1989 #sequence_revision 31-Mar-1989
C;Accession: C27115; A25488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: DNA
A;Residues: 1-189 <PAR>
A;Residues: 1-189 <PAR>
A;Cross-references: GB:AL139074; GB:AL111168; NID:g6967505; PIDN:CAB72599.1;
A;Experimental source: serotype O2, strain NCTC 11168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Superfamily: kininogen; cystatin homology F;19-65/Domain: cystatin homology (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Tatches 8; Conserv.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: The genome sequence of the food-borne pathogen Campylobacter jejuni reveals A;Reference number: A81250; MUID:20150912
A;Accession: C81428
                                                                                                                                                                                A;Cross-references: GB:J02662; NID:g205071; C:Superfamily: kininogen; cystatin homology
                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-48 <KAG>
                                                                                                                                                                                                                                                            A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            K-kininogen, LMW precursor -
124 NGHQKPHGLGHG 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       165 НСИДНИНСИСИС 176
                                  1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    slyD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cj0115
                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12
                                                                                          73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            rat (fragments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 55;
Pred. No.
                                                                                        Score 55; DB 2; Pred. No. 0.14;
                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                        PIDN:AAA41483.1; PID:g205072
                                                                                                                                                                   <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BB
                                                                                                                                                                                                                                                                                                                   transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .09
                                                                                                                                                                                                                                                                                                                                                                                                                                              for major acute phase alpha-1-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        #text_change 20-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
--
                                                                                                         Length 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 189;
                                                                                                                                                                                                                                                                                                                                                        ß
                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                   initiation sites of
                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , D.; Chil
ad, S.; Ba
                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PID: g696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (strain
                                                                                                                                                                                                                                                                                                                   rat
```

Fri

```
A; Reference number: A92653; M
A; Accession: A27115
A; Status: not compared with c
A; Molecule type: DNA
A; Residues: 1-315 <FUN>
C; Genetics:
                                      В
                                                                                               Ş
                                                                                                                                                                                                                                                                                                                          A;Molecule type: mRNĀ
A;Residues: 1-85 <IIJ>
A;Cross-references: GB:D13797; NID:g391903; PID:d1003460; PID:g391904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;I1jima, R.; Kurata, S.; Natori, S.
J. Biol. Chem. 268, 12055-12061, 1933
A;Title: Purification, characterization, char
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hemolymph antifungal protein precursor - flesh fly (Sarcophaga peregrina) C;Species: Sarcophaga peregrina C;Date: 03-May-1994 *sequence_revision 03-May-1994 *text_change 09-Sep-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
"~+~hes 9; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-314 <SEE>
A; Cross-references: EMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: 221572
A; Accession: T35241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Seeger, K.J.; Harris, D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A. submitted to the EMBL Data Library, September 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Streptomyces coelicolor
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 05-Nov-1999
C;Accession: T35241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Superfamily: kininogen; cystatin homology
F;19-65/Domain: cystatin homology (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: MAP]
C; Superfamil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Accession: A45969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A45969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:AL031515; PIDN:CAA20646.1; GSPDB:GN00070; SCOEDB:SC5C7.34 A;Experimental source: strain A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein SC5C7.34 SC5C7.34 - Streptomyces coelicolor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 73.3%;
Best Local Similarity 66.7%;
Matches 8; Conservative
                                                                                                                                                                         Matches
                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                148 NGHQKPHGLGHG 159
                                      22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18
                                                                                                                                                                                                         Local
                                                                          1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SCOEDB: SC5C7.34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  нснсоснснснс
                                      нееоронечене
                                                                                                                                                                         Similarity
8; Conser
                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29
                                                                                                                                                                                                      69.3%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72.0%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MUID:87250580
                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 55; DB
Pred. No. 0.15
3; Mismatches
                                                                                                                                                                                                      Score 52; DB 2
Pred. No. 0.12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 54; I
Pred. No. 0.
                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cDNA cloning of an antifungal protein from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 15;
                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                  ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲.
                                                                                                                                                                                                                                     Length 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                      Indels
                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
RESULT
                                                                                                   B
```

```
RESULT TO2681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans A;Reference number: A83650; MUID:20263314 A;Accession: E83992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          probable zinc transporter At2g46800 [imported] - Arabidopsis thaliana N;Alternate names: hypothetical protein F19D11.8 C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 16-Feb-2001 C;Accession: T02681; D84907
                                                                                                                                                                                                                                                                                                                 C; Genetics:
A; Gene: BH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Takami, H.; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, Nucleic Acids Res. 28, 4317-4331, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATP/GTP-binding protein (ImpB/MucB/SamB family) BH2741 [imported] - Bacillus halodura C;Species: Bacillus halodurans C;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 31-Dec-2000 C;Accession: E83992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana. A;Reference number: A84420; MUID:20083487 A;Accession: D84907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Experimental source: cultivar Columbia
R;Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon,
euss, D.; Nierman, W.C.; White, O.; Elsen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Rounsley, S.D.; Lin, X.; Kaul, S.; Shea, T.P.; Fujii, C.Y.; Mason, T.M.; She submitted to the EMBL Data Library, September 1998
A;Description: Arabidopsis thaliana chromosome II BAC F19D11 genomic sequence A;Reference number: Z14698
                                                                                                                                                                                                                                                                                                                                                                                                      A; Experimental
                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:AP001516; GB:BA000004; NID:g10175192; PIDN:BAB06460.1; GSPDB:G
A;Experimental source: strain C-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-409 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: At2g46800; F19D11.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:AE002093; NID:g3510254; PIDN:AAC33498.1; GSPDB:GN00139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-398 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       euss, D.; Nierman, W.C.; Nature 402, 761-768, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:AC005310; NID:g3510247; PID:g3510254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-398 < ROU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: T02681
                                                                                                                                   Query Match
Best Local
                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           184 HGHSHGHGHGHG 195
1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11
                                                                                                                                                                                                                                                                                                                      BH2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 HGHEQQHGLGHG
                                                                                    Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
8; Conserv
                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                               58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              68.0%;
                                                                                                                          Score 51; DB 2
Pred. No. 0.87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 51; Depression of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Shea, T.P.; Fujii, C.Y.; Mason, T.M.; Shen, September 1998
                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 84;
                                                                                                                                                                    2;
                                                                                         ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                         Length 409;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 398;
                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F . .
```

242 HSHDKQKGIGHG

```
A;Title: pipsqueak encodes a novel nuclear protein required downstream of seven-up for A;Reference number: S66148; MUID:96134923
A;Accession: S66148
                                                                                                                                                                      C;Accession: S66148
R;Weber, U.; Siegel, V.; Mlodzik, M.
EMBO J. 14, 6247-6257, 1995
                                                                                                                                                                                                                                            gene pipsqueak protein A short form - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                      RESULT
S66148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: DNA
A;Residues: 1-199 <OBE>
A;Cross-references: EMBL:AL163816
A;Experimental source: cultivar Columbia; BAC clone T20010
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hypothetical protein T20010.200 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 20-Apr-2000
C;Accession: T48099
                       A; Molecule type: DNA
A; Residues: 1-535 <WEB>
                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Cross-references: EMBL:U24398; NID:g2947080; PID:g2947081
A;Experimental source: cv. Taichung 9
C;Comment: This protein is cold-induced.
C;Superfamily: cold stress protein COR19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Kung, C.C.; Yeh, K.W.; Lin, C.Y.; Chen, Y.M.
Bot. Bull. Acad. Sin. 39, 9-15, 1998
Bot. Ell. Acad. Sin. 39, 9-15, 1998
Bot. Characterization of a pea gene responsive to low temperature.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Species: Pisum sativum (garden pea)
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 24-Nov-1999
C;Accession: T07618
R;Kung, C.C.; Yeh, K.W.; Lin, C.Y.; Chen, Y.M.
A; Cross-references:
                                                                       A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Note: T20010.200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Map position: 3
A; Introns: 163/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Reference number: Z24484
A;Accession: T48099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                submitted to the Protein Sequence Database, April 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Obermaier, B.; Ottenwaelder, B.; Duchemin, D.; Zeitler, K.; Mewes, H.W.; Rudd, S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  рЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-110 <KUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: Z16055
A; Accession: T07618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         T07618
cold stress protein cill.8 - garden pea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 67.3%;
Best Local Similarity 42.9%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 66. nes 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                        92 HGHGRGHGHGHG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  33 HGHEHGHGAEYKGEEHGFGHG 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 HGHE-----QQHGLGHG 12
EMBL: X90986; NID: g1149498; PIDN: CAA62473.1; PID: g1149499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 50; DB 2; Pred. No. 0.59; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 50.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2; Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
```

Ĭ,

0

Search completed: July Job time: 643 sec

6, 2001, 09:17:57

```
Result
No.
                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                             Database
                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             on:
                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                          Score
 41
40.5
40.5
                                    Query
Match Length
 BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-437-912-1
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          July 6, 2001, 09:10:29; Search time 37.59 Seconds (without alignments) 10.936 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                           SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                           93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                нснеоонсьсис 12
 644
619
621
639
661
693
                                                                                                                                                                                                                                                           DВ
                                                                                                                                                  CAUP_DROME
ANTF_SARPE
$109_RABIT
VG50_HSVII
FSH_DROME
COT1_YEAST
KE41_CAEEL
KE4_HUMAN
CH38_DROME
CH36_DROME
KE4_BRARE
CSUP_DROME
YML3_ARATH
PRSG_ECOL1
PIX1_DROME
                                                                  HYPB_RHOCA
SLYD_AERHY
DHN3_PEA
BOX5_NOTVI
SR68_DROME
SR68_HUMAN
SR68_CAEEL
                                                                                                                     KE4_PIG
BR3A_MOUSE
ZNT1_MOUSE
ZNT1_RAT
                                                    SR68_CANFA
                                                                                                                                                                                                                             KNH2_BOVIN
                                                                                                                                                                                                              KNG_MOUSE
                                                                                                                                                                                                                      KNG_RAT
                                                                                                                                                                                                                                            KNG_HUMAN
                                                                                                                                                                                                                                                                                SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                              93435
P28641
P5371
Q9vs52
Q9uhb9
Q20822
Q00004
Q4087
Q4687
P07183
P07182
Q9pub8
Q9v3a4
Q9v3a9
O18400
                                                                                                                                    P32798
Q9xtq7
Q92504
Q29175
P17208
                                                                                                                                                                                        P54269 drosophila
Q08617 sarcophaga
P50117 oryctolagus
                                                                                                                                                                                                                            P01042 homo sapien
P01045 bos taurus
P01044 bos taurus
                                                                                                                                                                                                                                                          Description
                                                                               8 mus musculu
8 mus musculu
0 rattus norv
0 rhodobacter
6 aeromonas h
1 pisum sativ
1 notophthalm
2 drosophila
arabidopsis
escherichia
drosophila
                                    drosophila
drosophila
                                                                                                                                                                               oryctolagus
ictalurid h
                                                    canis famil
escherichia
                      brachydanio
drosophila
                                                                 homo sapien
caenorhabdi
                                                                                                                                           homo sapien
sus scrofa
                                                                                                                                                          saccharomyc
caenorhabdi
                                                                                                                                                                                                              mus musculu
                                                                                                                                                                                                                     rattus norv
                                                                                                                                                                         drosophila
                                                                                                                                                                                                                                                                                                                                             OS DEED DEED AND RE
```

"Disulfide bonds in bovine HMW kininogens	
RP DISULFIDE BONDS.	
RT "Structural features of plasma kining and kiningens.";	
Pierce J.V.;	
RX MEDLINE=90255622; PubMed=4952632;	
SEQUENCE OF 381-389.	
[5]	
Eur.	
kininogen.";	
"The	
ler-Esterl	
'RA Lottspeich F., Kellermann J., Henschen A., Foertsch B.,	
MEDLINE=8603027	
RP SEQUENCE OF 379-644.	
[4]	
23:5691-5697(1984).	
weight kininc	
"Isolation of a human cDNA for alpha 2-thiol	
Ohkubo I., Kurachi K., Takasawa T., Shiokawa H., Sasaki M.;	
RX MEDLINE=85122621; PubMed=6441591;	
SEQUENCE OF 1-401	
J. Biol. Chem	
RT its evolution.";	
"Structural o	
Nakanishi S.;	
MEDLINE=85234583; PubMed=2989294;	
E STRUCTURE.	
two human prekininogens.";	
weight and low molecular weight prekininogens. Primary	
"Cloning and	
shi S.;	
RX MEDLINE=85234582; PubMed=2989293;	
[1]	
OX NCBI_TaxID=9606;	
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;	
Eukaryota; Me	
OS Homo sapiens (Human).	
<b>7</b>	
Children .	

```
PIR; A01279; KC
PIR; A25276; A3
PIR; A01280; KC
PIR; B25276; B3
PIR; S02482; SC
SWISS-2DPAGE; I
                                                                                                                                                                                                                                       EMBL; M11521
EMBL; M11523
EMBL; M11524
EMBL; M11524
EMBL; M11525
EMBL; M11526
EMBL; M11527
EMBL; M11527
EMBL; M11527
EMBL; M11528
EMBL; M11528
EMBL; M11521
EMBL; M11521
EMBL; M11523
EMBL; M11523
EMBL; M11523
EMBL; M11524
EMBL; M11525
EMBL; M11526
EMBL; M11526
EMBL; M11526
EMBL; M11527
EMBL; M11528
             CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seikagaku 56:808-808(1984).

Seikagaku 56:808-808(1984).

IT FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2) HAW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HAW-KININOGEN XHHIBITS THE THROMBIN-AND PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HAW-KININOGEN SHOWS A VARIETY OF PRYSTOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTRALANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM DERIVED RELAXING FACTOR ACTION); (5) LMW-KININOGEN IS IN CONTRAST TO HAM-KININOGEN NOT INVOLVED IN BLOOD
                                       SIGNAL
                                                           Glycoprotein; Plasma; Repeat; Bradykinin; Blood coagulation;
                                                                                                             InterPro; IPRO Pfam; PF00031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as long modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced between the Swiss Institute of Bioinformatics and the European Bioinformatics Institute. There are a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seikagaku
                                                                                                                          InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                    MIM; 228960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: CONTAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLOTTING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M11437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             K02566;
                                                                                    PR00334; KININOGEN.; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BRADYKININ IS RELEASED FROM KININOGEN BY LARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                splicing.
                                                                                                                                                             ; KGHUL1.
; B25276.
; S02482.
E; P01043;
                                                                                                                                                                                                                KGHUH1
A25276
                                                                                                                                                                                                                                                                          AAB59550.1
AAB59550.1
AAB59550.1
AAB59550.1
AAB59551.1
AAB59551.1
AAB59551.1
AAB59551.1
AAB59551.1
AAB59551.1
                                                                                                                                                                                                                                                                                                                                                                                                                           AAB59550.1;
AAB59550.1;
AAB59550.1;
AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                 AAB59551
AAB59551
                                                                                                                                                                                                                                                    AAB59551
                                                                                                             cystatin;
                                                                                                                                                                                                                                          AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                   AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA35497.1;
18
644
380
389
                                                                                                                                                               HUMAN
                                                                                                              ω
                                                                                                                                                                                                                                                                                                                                                                JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                י; 2.
אat; Thiol protease j
tion; Inflammatory re
                                                                                                                                                                                                                                                   JOINED.
                                                                                                                                                                                                                                                                          JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
 BRADYKININ
           KININOGEN HEAVY CHAIN.
                        KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (SHOWN
                                                             response;
                                                         inhibitor; Vasoc
response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ВY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HERE) AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ЬУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                        Vasodilator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collaboration
- outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       way
```

```
RESULT 2
KNH2_BOVIN
   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                    KNH2_BOVIN STAN

PO1045;

21-JUL-1986 (Rel. (

21-JUL-1986 (Rel. (

21-CCT-2000 (Rel. (

01-CCT-2000 (Rel. (

KININOGEN, HMW II I

BRADYKININ)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOD_RES
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea Bovidae; Boyinae; Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
                SEQUENCE OF 19-376.
MEDLINE=87137530; PubMed=3546295;
                                                              weight kininogens.";
Nature 305:545-549(1983).
                                                                            "A single gene for weight kininogens."
                                                                                                             Kitamura N.,
                                                                                                                          SEQUENCE FROM N.A. MEDLINE=84014106; PubMed=6571699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                       Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                  463
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                              нснеоднстенс
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
12; Conserv
                                                                                                                                                                                                                                         (Bovine)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 4 2 0

4 4 5 0

1 9 9

2 8 8 3

1 1 4 2

2 2 2 0 6

2 2 2 2 0 6

2 2 2 2 6

2 2 2 6

2 2 2 6

2 2 2 6

3 3 2 1

3 4 8 1

3 5 1

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 6 2 8

4 7 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8

4 8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 8

8 8 
 Miyata T.,
                                                                                                          Takagaki Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                     01, Created)
01, Last sequence update)
40, Last annotation updat
PRECURSOR (THIOL PROTEINA
                                                                                                                                                                                                                                                                                                                                                                                                                                474
                                                                                             bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        644
593
71945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hashimoto N.,
                                                                                             Furuto S., Tanaka T., Nawa H., Nakanishi S.; high molecular weight and low molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YSPPHTSMAPAQDEERDSGKEQGHTR -> SHL
PPKAGAEPASEREVS (IN ISOFORM LMW).
MISSING (IN ISOFORM LMW).
T -> I (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KININOGEN LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
ACTIVENCY (ASSOCIATED WITH CLOTTING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 75; DB 1;
Pred. No. 0.0001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTIVITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3132B4CBAF8FBB7E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                     ion update)
PROTEINASE
                                                                                                                                                                                                                                                                                                                                                   619
                                                                                                                                                                                                       Ruminantia; Pecora; Bovoidea;
Kato H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                      INHIBITOR) [CONTAINS:
 Hayashida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 644;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACID
 Ξ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SHLRSCEYKGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
InterPro; IPR000010; -.
InterPro; IPR002395; -.
Pfam; PF00031; cystatin; 3.
PFAINTS; PR000314; KININGGEN.
PRINTS; PR000387; CYSTATIN; 2.
Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing;
Thiol protease inhibitor; Bradykinin; Blood coagulation; Signal;
                                                                                                                                             EMBL; V01492; CAA24736.1; -.
EMBL; V01492; CAA24737.1; ALT_SEQ.
PIR; A01282; KGBOH2.
PIR; B29559; B29559.
HSSP; P04129; IAFI.
                                                                                                                                                                                                                                                           modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                   This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Han Y.N., Komiya M., Iwanaga S., Suzuki T.;
"Studies on the primary structure of bovine high-molecular-weight
kininogen. Amino acid sequence of a fragment ('histidine-rich
peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
-i- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Miyata T., Iwanaga S.;
"Bovine high molecular weight kininogen. The amino acid sequence, positions of carbohydrate chains and disulfide bridges in the heavy chain portion.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HMW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGGLATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKERIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION ACCICEPTORS (4E3)
RELBASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ
ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 456-496
MEDLINE=75170265; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 387-455.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Han Y.N., Kato H., Iwanaga S., Suzuki T.;
"Primary structure of bovine plasma high-molecular-weight kininogen.
The amino acid sequence of a glycopeptide portion (fragment 1)
following the C-terminus of the bradykinin moiety.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=76260155; PubMed=956151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kato H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-70180420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   \overline{\omega}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Studies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. 67:313-323(1970).
                                                                                                                                                                                                                                                                                                                       European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELIULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW II AND LAW II KININOGEN PRECURSORS ARE PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TO RESIDUE 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTION
                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ies on the structure of bovine kininogen: cleavages of disulfide and of methionyl bonds in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF 376-391.
70180420; PubMed=4986212;
Nagasawa S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79:1201-1222(1976).
response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262:2768-2779(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=1169237;
                                                                                                                                                                                                                                                                                                                                                               EMBL
                                                                                                                                                                                                                                                                                                                                                             a collaboration -
                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                     .ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                           no
                                                                                                                                                                                                                                                                                                                                             g
```

```
RESULT
KNH1_B
밁
                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
CHAIN
                        positions of carbohydrate
chain portion.";
                                                                                                                           Bovidae; Bovinae; Bos. NCBI_TaxID=9913;
                                                                                                                                                                            21-JUL-1986 (Rel.
21-JUL-1986 (Rel.
01-JUN-1994 (Rel.
                                                                                                                                                                                                        BOVIN
KNH1_BOVIN
SEQUENCE OF 378-393.
MEDLINE=70180420; PubMed=4986212;
                   J. Biol.
                                            Sueyoshi T., Miyata T., Hashimoto N., Kato H., Miyata T., Iwanaga S.;
                                                           MEDLINE=87137530;
                                                                               weight kininogens.";
Nature 305:545-549(1983).
                                                                                                  MEDLINE=84014106; PubMed=6571699;
Kitamura N., Takagaki Y., Furuto
                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                           Eŭkaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pe
                                                                                                                                                         Bos taurus
                                                                                                                                                               BRADYKININ].
                                                                                                                                                                      KININOGEN, HMW
                                                                                                                                                                                          P01044;
21-JUL-1986
                                                                                                                                                                                                                                                                                                                                DISULFIC
                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                        DISULFIE
                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYL
                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYL
                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYL
                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                       "Bovine high molecular weight kininogen.
                                                                 SEQUENCE OF 19-378
                                                                                            "A single gene for
                                                                                                                                                                                                                                                                                                           VARIANT
                                                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                             DISULFIL
                                                                                                                                                                                                                                                                                                                                                                                                                                          MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                         461
                                                                                                                                                                                                                                                    1 HGHEQQHGLGHG
                                                                                                                                                                                                                                         HGHQKQHGLGHG
                                                                                                                                                                                                                                                                   l Similarity
10; Conser
                    Chem.
                                                                                                                                                         (Bovine).
                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                     262:2768-2779(1987)
                                                                                                                                                                      I PRECURSOR
                                                                                                                                                                                                                                                                                                   A,
                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                            01,
01,
29,
                                                                                                                                                                                                                                         472
                                                           PubMed=3546295;
                                                                                                                                                                                                                                                     12
                                                                                            aki Y., Furuto S., Tanaka T.,
bovine high molecular weight
                                                                                                                                                                                                                                                                         90.7%;
83.3%;
                                                                                                                                                                            Last
                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                     MW;
                                chains and
                                                                                                                                                                     sequence update)
annotation update)
(THIOL PROTEINASE INHIBITOR) (CONTAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                               CYSTATIN-LIKE
CYSTATIN-LIKE
CYSTATIN-LIKE
                                                                                                                                                                                                                                                                         Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                 N-LINKED
                                                                                                                                                                                                                                                                                                           HLH
                                                                                                                                                                                                                                                                                                                                                                                                                       OR 169
                                                                                                                                                                                                                                                                                                                                                                                                                                  PYRROLIDONE CARBOXYLIC N-LINKED (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                            PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEAVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KININOGEN,
                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                   -> P.
-> V.
-> K.
F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                   Mismatches
                                 disulfide
                                                                                                                                                                                                        621 AA
                                                                                                                                                                                                                                                                                                                                                                                                 (GLCNAC.)
(GLCNAC.)
                                                                                                                                                                                                                                                                        ; DB 1;
. 0.0012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MMH
                                      The
                                                                                                                                                                                                                                                                                                                                                                                                                                                ωNH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       II.
                                      amino acid
                                                                                                                                                                                                                                                                   0,
                                bridges
                                                   Hayashida
                                                                                                                                                                                                                                                                                Length 619;
                                                                                            Nawa H.,
and low n
                                                                                                                                            Pecora;
                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                               (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                         ACID
                                                                                             molecular
                                       sequence,
                                                                                                   Nakanishi
                                                                                                                                            Bovoidea;
                                 the
                                                                                                                                                                                                                                                                   0;
                                 heavy
                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                   0
```

```
MOD_RES
CARBOHYD
CARBOHYD
CARBOHYD
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                          CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                        CHAIN
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PRO0334; KININOGEN.
PRINTS; PRO034; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing;
Glycoprotein; Plasma; Bradvkinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HWA-KININGEN LAYS AN INHIBITORS OF THIOL PROTEASES; (2)
HWW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMEIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIDOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ
ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Exthe European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Studies on the primary structure of bovine high-molecular-weight kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; V01491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=75170265; PubMed=1169237;
Han Y.N., Komiya M., Iwanaga S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 458-498 MEDLINE=75170265; Pt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kato H., Na
"Studies on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00031; cystatin; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000010; -.
                                                                                                                                                                                                                                                                                                                                                                                                                 inflammatory response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININGGEN BY
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW I AND LAW I KININOGEN PRECURSORS ARE PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A01281; KGBOH1.
A29559; A29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESIDUE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nagasawa S., Suzuki T.; on the structure of bov do on the structure of bov do of methionyl bonds in em. 67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR002395; -.
  19
380
389
19
136
258
258
19
136
168
168
197
204
106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAA24735.1;
  621
378
388
621
135
257
257
378
19
378
19
19
136
168
168
197
204
591
125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                               Signal
                                                                                                                                                                                                   LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
PYEROLIDONE CARBOXYLIC A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bovine kininogen: cleavages of disulfide in kininogen-II.";
                                                                  N-LINKED (GLCNAC. . .) (PARTIAL)
N-LINKED (GLCNAC. . .).
INTERCHAIN.
                                                                                                                                                             PARTIAL.
                                                                                                                                                                                     N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                        BRADYKININ
                                                                                                                                                                                                                                                                                                                                              HEAVY CHAIN.
                                                                                                                                                                                                                                                                                                                                                                      KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                      H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BY PLASMA KALLIKREIN
                                                                                                                                                                                                             ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration - MBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   its
```

```
RESULT
KNG_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                      Kageyama R., Kitamura N., Ohkubo H., Nakanishi S.;

"Differing utilization of homologous transcription initiation sites of rat K and T kininogen genes under inflammation condition.";

J. Biol. Chem. 262:2345-2351(1987).

-I- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2) HMW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TV FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF THE PROTECTION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
DISULFID
DISULFID
SEQUENCE
                                                                                                                                                                                                                                                                                      Fung W.-P., Schreiber G.;

"Structure and expression of the genes protein (thiostatin) and kiningen in t J. Biol. Chem. 262:9298-9308(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                      "Primary structures of the mRNAs encoding the rat precursors bradykinin and T-kinin. Structural relationship of kininogens bradykinin and T-kinin and alpha 1-cysteine proteinase
                                                                                                                                                                                                                            STRAIN=WISTAR; TISSUE=Liver; MEDLINE=87137465; PubMed=3818598;
                                                                                                                                                                                                                                                          SEQUENCE OF 1-41 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BUFFALO;
                                                                                                                                                                                                                                                                                                                                                                                                             J. Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1988 (Rel. 01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KNG_RAT
P08934; P08933;
01-NOV-1988 (Re
                                                                                                                                                                                                                                                                                                                                                 MEDLINE=87250580;
                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-65 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KININOGEN PRECURSOR [CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                         nn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Furuto-Kato S., Matsumoto A., Kitamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=86008264; PubMed=2413018;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kitagawa H., Kitamura N., Hayashida H., Miyata T., Nakanishi S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Differing expression patterns and evolution
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=87137443; PubMed=3029068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 HGHEQQHGLGHG
PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) MATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMIHATTON OF NOTICE.
                                                                                                                                                                                                                                                                                                                                                                                                                        ibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tamily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chem. 262:2190-2198(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N.A.
                                                                                                                                                                                                                                                                                                                                                                                                           260:12054-12059(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                 PubMed=2439509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09, Created)
09, Last sequence up
40, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
247
266
339
369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             90.7%;
83.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ISOFORM).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HMW AND LMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D16850BEFE3C55CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                     enes for major acute phase alpha
in the rat.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0.0013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nakanishi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the rat kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

```
Query Match
Best Local Similarity
                                                                                                                                 VARSPLIC
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000010; -.
InterPro; IPR002395; -.
Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; L29428; AAA41486.1;
EMBL; M11884; AAA41187.1;
EMBL; M14369; AAA41484.1;
EMBL; M14369; AAA41485.1;
EMBL; M16455; AAA41482.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This
                                                                                                                                                                                                                                  VARSPLIC
                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; A25486; A25486.
PIR; A28055; A28055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                modified
                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE SPECIFICITY: PLASMA.

TISSUE SPECIFICITY: PLASMA.

PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.

MISCELLANEOUS: RAT EXPRESS FOUR TYPES OF KININOGENS: THE CLASSICAL

MISCELLANEOUS: NAT TWO ADDITIONAL LAW-LIKE KININOGENS: T-I AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              European
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADKININ ACTION, INDIRECTLY VIA DENDOTHELIUM-DERIVED RELAXING FACTOR ACTION); (5) LMW-KININGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMW-KININOGEN IS IN CONTRAST TO HMW-KININOGEN NOT INVOLVED IN BLOOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLOTTING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      non-profit institutions as long
                                                                                                      639
                                                                                                                                                                                                                                     434
61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                n; Plasma; Repeat; Thiol protease inhibitor; Vasodilator;
Blood coagulation; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Swiss Institute of Bioinformatics Bioinformatics Institute. There a
                                                                                                      Ã,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18
639
380
389
639
136
                                                                                                         70933
82
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Multigene family.
.78;
                                                                                                      W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALT_SEQ
                                                                                                                                                                                               N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
N-LINKED (GLCNAC. ..) (POTENTIAL).
VSPSYIARVQEERDPGNEGGPIHGHGWLHAKQ -> RLLNS
CEYKGRLLKAGAGPAPERQAEASTVTP (IN ISOFORM
                                                                                                                                                                                                                                                                                                      BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYSTATIN-LIKE
CYSTATIN-LIKE
CYSTATIN-LIKE
Score
Pred.
                                                                                                                                 MISSING (IN ISOFORM LMW).
E -> K (IN REF. 2).
                                                                                                                                                                                  LMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HIS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INTERCHAIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KININOGEN LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KININOGEN
                                                                                                      -> K (IN REF. 2)
D3172DF94FF56AF5
NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HMW
DB 1;
0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEAVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (SHOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                        Length 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                         CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HERE) AND LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      İ'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
```

```
KNG_MOUSE
ID KNG_MOUSE
ID KNG_MOUSE
ID KNG_MOUSE
ID KNG_MOUSE
ID O1-OC
DT 01-OC
IT
RA TAKAN
RM [1]
RA TAKAN
RM [1]
RA TAKAN
RM SIEMMI
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F
CCC -!- F

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KNG_MOUSE STAN
008677; 008676;
01-0CT-2000 (Rel. 4
01-0CT-2000 (Rel. 4
01-0CT-2000 (Rel. 4
  SIGNAL
CHAIN
                                                                                                Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                      Glycoprotein; Plasma; Repeat; 1
Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                   EMBL; D84435; BAA
EMBL; D84415; BAA
MGD; MGI:1097705;
                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Takano M., Kondoh J., Yayama K., Okamoto H. "Molecular cloning of cDNAs for mouse low-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. (I: STRAIN=C57BL/6 x CBA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                      InterPro; IPR002395; -. InterPro; IPR003243; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KININOGEN PRECURSOR
                                                                                                                                                                                                                   InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PTM: BRADYKININ IS RELEASED FROM KININOGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KININOGEN IS IN CONTRAST TO HMW-KININOGEN CLOTTING (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGHQKPHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9;
                                                                                                                                                                                                          IPR000010;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                       BAA19743.1; -.
BAA19742.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . 40, Created)
. 40, Last seq
. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0, Last sequence update)
0, Last annotation update)
[CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HMW AND LMW).
    KININGEN
                                                                                   Thiol protease inhibitor; Vasodilator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                 Inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MMH
                                                                                                                                                                                                                                                                                                                                                                                   There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ξ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĀΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (SHOWN
                                                                                                                                                                                                                                                                                                                                             http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and high-
                                                                 response;
                                                                                                                                                                                                                                                                                                                                                                      Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HERE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                    Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 molecular
                                                                 Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND LMW;
                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
RESULT 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                 P54269;
01-OCT-1996
01-OCT-1996
01-OCT-2000
entities
or send a
                                                   between
the Euro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
DOMAIN
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                           modified
                                                                             This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARSPLIC
SEQUENCE
                                                                                                                                                                                                                      Gomez-Skarmeta J.-L., del Corral R.D., de la Ferres-Marco D., Modolell J.;
"Araucan and caupolican, two members of the "Araucan and caupolican, two members of the
                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                            encode
                                                                                                                                                                                                                                                                                                                                                                                   01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence up
01-OCT-2000 (Rel. 40, Last annotation
HOMEOBOX PROTEIN CAUPOLICAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
MEDLINE=96180722; PubMed=8620542;
                                                                                                                                                                                                                                                                                                       NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                 European Bioinformatics Institute.
                                                                                                 TRANSCRIPTION INITIATION.
SUBCELLULAR LOCATION: NUCLEAR (PROBABLE).
SIMILARITY: BELONGS TO THE TALE/IRO FAMILY OF HOMEOBOX PROTEINS.
                                                                                                                                                      FUNCTION: CONTROLS PRONEURAL AND VEIN FORMING GENES. POSITIVE TRANSCRIPTIONAL CONTROLER OF AC-SC (ACHAETE-SCUTE). MAY ACT A ACTIVATOR THAT INTERACTS WITH THE TRANSCRIPTIONAL COMPLEX
                                                                                                                                            ASSEMBLED ON THE AC AND SC PROMOTERS AND
                                                             SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                               de homeoproteins that control 85:95-110(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGHQKPHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            нснеоонстсне
                                                                                                                                                                                                                                                                                                                                                                                                                                                     DROME
          the Swiss Institute of Bioinformatics and the EMBL outstatipean Bioinformatics Institute. There are no restrictions on non-profit institutions as long as its content is in no and this statement is not removed. Usage by and for commen requires a license agreement (See http://www.isb-sib.ch/annou
 email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      433
661 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
73102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BRADYKININ.
KININOGEN LIGHT C
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
BY SIMILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MISSING (IN ISOFORM LMW). 774460258D58796E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC...) (POTENTIAL).

-LINKED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

N-LINKED (GLCNAC...) (POTENTIAL).

VSPPYIAREQEERDAETEQGPTHGHGWLHEKQ ->
CEYKGRLSKAGAEPAPERQAESSQVKQ (IN ISO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 62; DB 1;
Pred. No. 0.012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INTERCHAIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KININGEN HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY
SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                           proneural
                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     693 AA
                                                                                                                                                                                                                                                   de la Calle-Mustienes
                                                                                                                                                                                                        novel iroquois co
and vein-forming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY).
                                                                                                                                            PARTICIPATES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (IN ISOFORM
                                                                             D
                                                                                                                                                                                                                         complex,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                 collaboration -
L outstation -
                                                                                                                                                                                                          genes.";
             .ch/announce/
                                                              outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                         commercial
                                                                                                                                                                     AS
                                                                                                                                                                     ΑN
                                    way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
 Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
```

δõ

В

```
RESULT 7
ANTF_SARPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ANTF_SARPE
Q08617;
Q1-FEB-1995
01-FEB-1995
                           SIGNAL
CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
DOMAIN
DOMAIN
DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                                                                         use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; x95178; CAA64485.1; -
HSSP; P0283; 1SAN.
F1yBase; FBgn0015919; caup.
InterPro; IPR001356; -.
Pfam; PF00046; homeobox; 1.
                                                                                                                               PIR;
                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                          +++
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          J. Biol. Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oestroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sarcophaga peregrina (Flesh fly) (Boettcherisca peregrina).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pteryota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence up
30-MAY-2000 (Rel. 39, Last annotation
ANTIFUNGAL PROTEIN PRECURSOR (AFP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00027; HOMEOBOX_1; PROSITE; PS50071; HOMEOBOX_2;
                                                                                                          Fungicide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Transcription
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Purification,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=93280179; PubMed=8505329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Fat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=7386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           arvae.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EDLINE TO ACCOUNT OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURITY OF THE PURIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       656 HGHGHGHGLGHG 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: HOMODIMER.
TISSUE SPECIFICITY: HEMOLYMPH.
PTM: THE N-TERMINUS IS BLOCKED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: THIS PROTEIN INHIBITS THE GROWTH OF A VARIETY FUNGAL SPECIES. THE ANTIFUNGAL ACTIVITY OF THIS PROTEIN ENHANCED BY THE PRESENCE OF SARCOTOXIN IA.
                                                                                                                                  A45969;
                                                                                                                               D13797; BAA02954.1;
A45969; A45969.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 regua.
11 protein.
226 288
300 30'
405 4'
501 '
517
513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
Signal;
1
19
19
19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              body;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sarcophagidae; Sarcophaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                regulation; DNA-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   268:12055-12061(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           288
303
418
516
528
572
624
73749
Repeat.
18
85
85
73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74.78;
75.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Œ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POLY-GIN.
POLY-GIN.
POLY-HIS.
POLY-SER.
POLY-SER.
ANTIFUNGAL PROTEIN.
2 X 7 AA REPEATS OF
1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 56; DB 1
Pred. No. 0.11;
                                                                            POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HOMEOBOX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8E0D6D43C9CDC619 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TALE-TYPE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homeobox; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ĄΑ
                             OF Q-H-G-H-G-G-Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

```
RESULT
S109_RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                    Calcium-binding;
NON_TER 1
CA_BIND 9
CA_BIND 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     $109_RABIT
P50117;
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Dynamic of acute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This
  REPEAT
                      REPEAT
                                                                                                                                                                          PRINTS; PR00334; KININOGEN, PROSITE; PS00018; EF_HAND; PROSITE; PS00303; S100_CABI
                                                                                                                                                                                                                                          Pfam; PF01023; S_100; 1. Pfam; PF00036; efhand; 1
                                                                                                                                                                                                                                                                                                                                                  EMBL; AF091849; AAC61771.1; -. EMBL; D17404; BAA04227.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                    or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                       use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mori S., Goto K., Goto F., Mutakami K., Ohkawara S., Yoshinaga M.; "Dynamic changes in mRNA expression of neutrophils during the cour. of acute inflammation in rabbits.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-NEW ZEALAND WHITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Rabbit polymorphonuclear neutrophils form 35S-labeled S-sulfo-calgranulin C when incubated with inorganic [35S]sulfate."; D. Biol. Chem. 271:19802-19809(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=NEW ZEALAND WHITE: TISSUE-Neutrophils;
MEDLINE=96355278; PubMed=8702688;
Yang Z., de Yeer M.J., Gardiner E.E., Devenis
Underwood J.R., Robinson H.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Cı
Mammalia; Eutheria; Lagomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S100A9 OR MKr-14.
Oryctolagus cuniculus (Rabbit).
Oryctolagus cuniculus (Rabbit).
Vertebrata;
Oryctolagus cuniculus (Rabbit).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (MRP-14) (FRAGMENT).
S100A9 OR MRP-14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-CCT-1996 (Rel. 34, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
01-CCT-2000 (Rel. 40, Last annotation update)
CALGRANULIN B (MIGRATION INHIBITORY FACTOR-RELATED PROTEIN
                                                                 DOMAIN
                                                                                                                                                                                                                                                                                   InterPro; IPR002048; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=94198229; PubMed=8148323;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001751; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ween the Swiss Institute . The European Bioinformatics Institute. The European Brook institutions as long to the swing and the swing and the swing and the swing and the swing are swing as a swing and the swing are swing as a swing as a swing as a swing are swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing as a swing a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Immunol. 6:149-156(1994).
SIMILARITY: BELONGS TO THE S-100 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: CONTAINS 2 EF-HAND CALCIUM-BINDING DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HGGQDQHGYGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OF 45-82 FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 85
  103
111
                                                                 53
103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ã,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                   Repeat.
                                                                                                                                                                            EF_HAND; 1.
S100_CABP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73
9018
                                                                                      22
64
                                                                                                                                                                                                                                                                                                                                                                                                                                  license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 52; DB
Pred. No. 0.05
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1.
SITE I (LA SITE II () 2 X 8 AA ' G-H-S-H. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2.
E381779F923FB69B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Leporidae;
                                                                                      I (LOW AFFINITY) (POTENTIAL)
II (HIGH AFFINITY) (POTENTIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   118
                                                                 TANDEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Devenish R.J., Handley C.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
0.057;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oryctolagus
                                                                 REPEATS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ьy
                                                                 (POTENTIAL)
OF G-H-G-H-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is
                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 course
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                      O TO TO TO THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE TOTAL THE T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 9
VG50_HSVI1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VG50_HSVI1
Q00130;
                                                                                                        REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                  REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                              REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hypothetical
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-AUBURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-DEC-1992
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-DEC-1992
                                                                                                                                                                                                                                          REPEAT
                                                                                                                                                                                                                                                                                     REPEAT
                                                                                                                                                                                                                                                                                                         REPEAT
                                                                                                                                                                                                                                                                                                                                  REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR; F36791;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Davison
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [ctalurid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             А. J.
```

```
the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Viruses; dsDNA viruses, no unclassified Herpesviridae. WCBI_TaxID=10401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Channel catfish virus: a new type of herpesvirus."; Virology 186:9-14(1992).
                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M75136; AAA88153.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-92087490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHGHSHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                            s requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 herpesvirus 1 (Channel catfish virus) (CCV).
dsDNA viruses, no RNA stage; Herpesviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Rel.
(Rel.
(Rel.
L GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                                                                                                                                                                                         F36791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΑĄ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=1727613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13292 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  68.0%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence up
                                                                                                                                                                                                                                                                                                                                                            Repeat.
MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
Pred.
            114
115
116
117
118
119
119
220
221
221
222
223
224
225
227
                                                                                                                                                                                                                                               987654321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7496118E21AD5C41 CRC64;
2B64A781C519E8B4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ≥ 51; DB 1;
NO. 0.11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 on update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     670 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                      Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                        γď
                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                          for
                                                                                                                                                                                                                                                                                                                                                                                                                                        commercia]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                   8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
STATES TO THE TEST OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 10
FSH_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Haynes S.R., Mozer B.A., Bhatia-Dey N., Dawld I.)
"The Drosophila fsh locus, a maternal effect home apparent membrane proteins.";
Dev. Biol. 134:246-257(1989);
Lev. Biol. 134:246-257(1989);
Lev. Biol. Tolliant For Proper Explorer Function: Required Maternally For Proper Explorer Function: Required Involved In Partern Formation
-i- Functarity: High, To Human Rings Protein.
-i- SIMILARITY: CONTAINS 1 ET DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M23221; AAA28540.1; -
EMBL; M23222; AAA28541.1; ALT_TERM.
EMBL; M23222; AAA70824.1; -
EMBL; M15762; AAA70423.1; -
EMBL; M15763; AAA70423.1; -
EMBL; M15763; AAA70422.1; -
EMBL; M15742; A43742
PIR; A43742; A43742
HSSP; P04002; 1WFA.
                                     TRANSMEM VARIANT
                                                                                                                                                                 DOMAIN
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                   PROSITE;
                                                                                                                                                                                                                                                      DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             use by non-profit institutions as long modified and this statement is not removed: entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FSH_DROME STANDARD; PRT; 20
P13709; P13710;
O1-JAN-1990 (Rel. 13, Created)
O1-JAN-1990 (Rel. 13, Last sequence up
O1-OCT-1996 (Rel. 34, Last annotation
FEMALE STERILE HOMEOTIC PROTEIN (FRACIES)
FS(1)H OR FSH.
                                                                                TRANSMEM
                                                                                                      TRANSMEM
                                                                                                                          TRANSMEM
                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. MEDLINE=89276730; PubMed=2567251;
                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00439; bromodomain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda;
                                                                                                                                                                                                                                                                                                                                                                                                                        FlyBase; FBgn0004656; fs(1)h.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ephydroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pterygota; Neoptera; Endopterygota; Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                    nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              нснснснснс
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Conserv
                                                                                                                                                                                                                                                                                                                                                             PR00503;
                                                                                                                                                                                                                                                                                                                   PS50014;
                                                                                                                                                                                                                                                                                                                                                                                                      IPR001487;
                   51
495
945
330
451
750
790
816
874
1731
1939
1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                protein;
AA;
                                                                                                                                                                                                                                                                                                                                                             BROMODOMAIN
                                                                                                                                                                                                                                                                                                               BROMODOMAIN_1;
BROMODOMAIN_2;
                                                                                                                          123
567
1106
350
471
770
810
830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
205332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66
65
                                                                                                                                                                                                                                                                                                Bromodomain;
WW;
                                                                              POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                           POTENTIAL.
POTENTIAL.
                                                                                                                                                                                     POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
Pred.
                     нс
                                                                                                                                                                                                                                             BROMODOMAIN 2.
                                                        POTENTIAL.
                                                                                                                                                                                                                                ET DOMAIN.
                                                                                                                                                                                                                                                                        BROMODOMAIN
                     v,
                                       Ÿ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               tation update)
  (FRAGILE-CHORION MEMBRANE PROTEIN).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
849E0706D50A0098 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49;
No.
                                                                                                                                                                                                                                                                                           Transmembrane; Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROPER EXPRESSION OF OTHER N FORMATION, SUCH AS UBX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ormatics and the EMBL outstation There are no restrictions on it only as its content is in no wa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ļ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              d I.B.;
homeotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Brachycera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 670;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene, encodes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

```
RESULT 11
COT1_YEAST
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
              TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COT1_YEAST
P32798;
01-OCT-1993
                                                                                                                EMBL; M88252; AAA74884.1; -. EMBL; X90565; CAA62171.1; -. EMBL; Z75224; CAA99636.1; -.
                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                        InterPro; IPR002524; -.
Pfam; PF01545; Cation_efflux;
                                                                                                                                                                               entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                         Yeast 12:1021-1031(1996).

-!- FUNCTION: PROBABLY RESPONSIBLE FOR THE UPTAKE OF COBALT IONS. APPEARS TO ACT IN A DOSAGE-DEPENDENT MANNER TO COUNTERACT THE ADVERSE EFFECTS OF COBALT IONS ON CELLS. IT MAY PARTICIPATE IN THE REGULATION OF COBALT LEVELS UNDER NORMAL PHYSIOLOGICAL CONDITIONS AND MAY BE IMPORTANT IN THE SUPPLY OF METAL THAT IS REQUIRED FOR METALLOENZYME OR COFACTOR SYNTHESIS. IT REDUCES TOXICITY OF COBALT AND RHODIUM IONS. OTHER COMPONENTS RESPONSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=92375034; PubMed=1508175; Conklin D.S., McMaster J.A., Culbertson M.R., "COT1, a gene involved in cobalt accumulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COBALT UPTAKE PROTEIN COT1.
COT1 OR YOR316C OR O6131.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-1993 (Rel.
01-OCT-1996 (Rel.
30-MAY-2000 (Rel.
                                          Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schweizer M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=97051589; PubMed=8896266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cerevisiae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Saccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pearson B.M., Hernando
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Sequencing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                            FOR COBALT TRANSPORT EXIST.
SUBCELLULAR LOCATION: MITOCHONDRIAL MEMBRANE. ANOTHER POSSIBILITY
EXISTS THAT IT IS ASSOCIATED WITH ANOTHER UNLDENTIFIED MEMBRANE
THAT HAS BEEN ENRICHED IN THE MITOCHONDRIAL MEMBRANE FRACTIONS.
SIMILARITY: BELONGS TO THE SLC30A FAMILY OF TRANSPORTERS.
                                                                                    $31302; $31302.
$0005843; COT1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        нсисисненся 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۷Χ
                                          Cobalt; Mitochondrion;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biol. 12:3678-3688(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of a 35.71 kb DNA segment on the right arm of XV reveals regions of similarity to chromosomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
 10
43
78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FY1679;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                27, Created)
34, Last sequence up
39, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Saccharomycetaceae;
27
60
100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65.3%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Payne
            POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 49;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J.,
                                           Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Wolf S.S., Kalogeropoulos A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ζ
                                                                                                                                                                                           http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kung C.;
in Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                             COMPONENTS RESPONSIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chromosomes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 2038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                            THAT IS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              I and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

•						•		
,								
ė								
	.*				•			
								•
				,				
		•					•	
	•			•				
				١				
						•		
			. •					
		•						
				•				
•								
					•			
			•					

```
Database :
                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run on:
 SPTREMBL_16:*

1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_inverteb:
6: sp_mammal:*
5: sp_mac:*
7: sp_mhc:*
8: sp_organel:
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:
12: sp_unclass
13: sp_vertebr
14: sp_virus:**
                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-437-912-1
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        July 6, 2001, 09:09:24; Search time 118.42 Seconds (without alignments) 13.407 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                            425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ненеоонетене 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                              sp_archea:*
sp_bacteria:*
sp_fungi:*
                                                                 sp_phage:*
sp_plant:*
                                                                                                                                 sp_invertebrate:*
sp_mammal:*
sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                   sp_organelle:*
                                                    sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                            425026
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

19	18	17	16	15	14	13	12	11	10	9	80	7	0	51	4	ω	2	_	Result No.
50	50	50	50.5	51	51	51	51	51	51	51	51	51	54	54	54	55	56	62	Score
66.7	66.7	66.7	67.3	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	72.0	72.0	72.0	73.3	74.7	82.7	Query Match Length DB
1064	213	199	110	989	605	457	409	398	348	99	86	79	511	314	119	189	693	126	ength [
5	S	10	10	υ	σ	σ	Ν	10	Ŋ	10	_	10	σ	N	G	N	U	11	H
Q9V5N1	Q9GTNO	Q9LYB2	064396	Q9W2S4	077280	Q9W4I6	Q9K9A8	081036	Q9W2X1	Q9ZRC7	022671	Q9M435	Q9VXG3	086731	Q9VYP3	Q9PJ12	Q9VU00	009016	ID
Q9v5n1 drosophila	Q9gtnO drosophila	Q9lyb2 arabidopsis	O64396 pisum sativ	Q9w2s4 drosophila		Q9w4i6 drosophila	Q9k9a8 bacillus ha	O81036 arabidopsis	Q9w2x1 drosophila	Q9zrc7 alnus gluti	022671 alnus gluti	Q9m435 quercus rob	Q9vxg3 drosophila	O86731 streptomyce	Q9vyp3 drosophila	Q9pj12 campylobact	Q9vu00 drosophila	009016 rattus norv	Description

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
45	45	45	45	45	46	46	46	46	46.5	47	47	47	47	48	48	49	49	49	49	49	49	49	49	49.5	50
60.0	60.0	60.0	60.0	60.0	61.3	61.3	61.3	61.3	62.0	62.7	62.7	62.7	62.7	64.0	64.0	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	66.0	66.7
495	494	492	420	317	519	505	198	168	390	490	277	179	160	2262	2262	1937	735	686	554	457	450	385	206	218	1085
տ	ഗ	1	11	2	G	ഗ	Çī	S	ഗ	2	10	10	10	ر.	ر.	Ŋ	σ	ъ	ഗ	Ŋ	S	u	ഗ	5	ر.
Q9VEX1	Q9GRW9	Q9JKN2	Q9QVZ9	005673	Q9VU19	Q9V3C6	6ANN6D	Q9VWM5	Q18401	Q9X9W6	049678	Q9M0L8	Q43520	Q9W0Q4	Q9Y0E4	Q9W3L3	Q9NES7	Q9VWS0	Q9W4C1	Q26227	Q27920	Q9VWX5	Q9GTN1	Q9V3P9	Q24455
Q9vex1	Q9grw9	Q9jkn	29942	005673	Q9vui9	Q9v3c6	. Q9nnv9	Q9vwn5	Q18401	Q9x9w6	04967	Q9m01	Q43520	Q9w0q4	Q9y0e4	Q9w313	Q9nes7	Q9vws0	Q9w4c1	Q26227	Q27920	Q9vwx5	Q9gtn1	Q9v3p9	Q24455
9vex1 drosophila	29grw9 drosophila	Q9jkn2 mus musculu	)9qvz9 mus sp. brn		drosophila	drosophila	plasmodium	drosophila	caenorhabdi	9x9w6 streptomyce	049678 arabidopsis	)9m018 arabidopsis	0 lycopersico	drosophila	drosophila	drosophila	caenorhabdi	drosophila	drosophila	rhynchoscia	bradysia hy	drosophila	drosophila	drosophila	drosophila

## ALIGNMENTS

RESULT Q9VU00 ID Q	Ф	Qu Be	SQ	7 F	DR	DR	R P	RT	RТ	RA	RA	æ	RC	RP	RN:	28	3 8	000	G S	DE	DT	DT	DT	AC	ij	RESULT
LT 2 00 Q9VU00	1 HGHEQQHGLGHG    ::       38 HGHQKPHGLGHG	Query Match Best Local Sim: Matches 9;	SEQUENCE	NON TER			EMBL: AF003	kininogen g	"Strain-spe	Jacob H.J.;	Harris E.L.	MEDLINE=974		UENCE		NCBI TaxID=10116;	Mammalia: Futheria:	Rattus norvegicus	KNGK.	K-KININOGEN	01-OCT-2000	01-JUL-1997	01-JUL-1997	009016;	009016	ILT 1
PRELIMINARY;	HGLGHG 12         GLGHG 49	h Similarity 75.0%; 9; Conservative 2	Ä	126 126		PR002395;	AF003623; AAC09070.1; -		"Strain-specific deletions in		Harris E.L., Grigor M.R., Innes B.A.,	MEDLINE=97468288; PubMed=9321484;	YU;	FROM N.A.			metazoa; Chordata; https://doi.org/	<u></u>		(FRAGMENT).	15,		(TrEMBLrel. 04, C		PRELIMINARY;	
PRT;		Score 6 Pred. N 2; Mism					•	of both	in exon 10		es B.A.	484;									Last ann	Last seg	Created)		PRT;	
693 AA.		re 62; DB 11; Length 126; nd. No. 0.0067; Mismatches 1; Indels 0; Gaps (	9CCDF8751DA49C88 CRC64;					genes t	0 of rat K-kininogen and Tl-	,	, Harrap S.B., Koike G.,						Coimpognathi: Maridae: Marinae: Battas Coimpognathi: Maridae: Buteleoscomi;				annotation update)	sequence update)			126 AA.	
		0;																	٠							

```
망
                                        δõ
                                                                                                                                                                                                         RA Harris N.L. Harvey D. Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L. Harvey D. Heiman T.J., Wei M.-H., Ibeywam C.,
RA Harris N.L. Houston K.A., Howland T.J., Wei M.-H., Ibeywam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Liu K., Kalush F., Karpen G.H., Ke Z., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Nelson D.R., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Syier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Yelliams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou S., Zhao O., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou S., Zhu X., Smith H.O.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.,
"The genome sequence of Drosophila melanogaster.",
L. Science 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RA Adams M.D. (Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Bavsketin P., Brottiter P.,
RA Borkova D., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Gepablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L. Harvey D. Heimp T. Leonandar I.D.
                                                                                                              Query Match
Best Local
                                                                                        Matches
                                                                                                                                                                                                       DNA-binding; HoseQUENCE 693
                                                                                                                                                                                                                                                  SMART; SM00389; HOX; 1.
                                                                                                                                                                                                                                                                          Pfam; PF00046; homeobox; 1.
PROSITE; PS00027; HOMEOBOX_
PROSITE; PS50071; HOMEOBOX_
                                                                                                                                                                                                                                                                                                                                                                                             -1- SIMILARITY: TO OTHER HOMEOBOX DOMAINS. EMBL; AE003540; AAF49895.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAUP OR CG10605.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. STRAIN=BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                     FlyBase; FBgn0015919; caup.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ephydroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pterygota; Neoptera;
656 HGHGHGHGLGHG
                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000
                                                                                                         Local
                                           1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                        SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROTEIN
                                                                                        Similarity
9; Conser
                                                                                                                                                                                                                                                                       PS00027; HOMEOBOX_1; PS50071; HOMEOBOX_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) (TrEMBLrel.) (TrEMBLrel.
                                                                                        Conservative
                                                                                                                                                                                                       Homeobox; Nuclear protein.
93 AA; 73667 MW; FBEB1616493F7EC9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             eoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Drosophilidae; Drosophila.
667
                                        12
                                                                                                           74.78;
75.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13,
13,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
Last sequence update)
Last annotation update)
                                                                                        0
                                                                                   Score 56; DB
Pred. No. 0.34
0; Mismatches
                                                                                                                                                                                                                                                                          DB 5;
0.34;
                                                                                                                               Length 693;
                                                                                        Indels
                                                                                   0;
                                                                                   Gaps
                                                                                   0;
```

```
RESULT
Q9VYP3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9VYP3
Q9VYP3;
01-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
01-MAR-2001 (TrEMBLrel. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9PJ12;
Q9PJ12;
01-OCT-2000
01-OCT-2000
                                                                                                                                                          Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., When K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G. Mabril J.F., Agbayani A., An H.-J., Andrews-Ffannkoch C., Baldwin D., Ballow B.W. Beatland A., An H.-J., Andrews-Ffannkoch C., Baldwin D., Ballow B.W. Beatland A., An H.-J., Andrews-Ffannkoch C., Baldwin D., Ballow B.W. Beatland B., An H.-J., Andrews-Ffannkoch C., Baldwin D.,
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Beesson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Arthropoda; Tracheata; He
Pterygota; Neoptera; Endopterygota; Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Parkhill J., Wren B.W., Mungall K., Ketley J.M., Churcher C., Basham D., Chillingworth T., Davies R.M., Feltwell T., Holroyd: Jagels K., Karlyshev A.V., Moule S., Pallen M.J., Penn C.W., Quail M.A., Rajandream M.A., Rutherford K.M., Van Vliet A.H.M., Whitehead S., Barrell B.G.;
"The genome sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence of the food-borne pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting the sequence pathogen Campylobacter jetting
                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-BERKELEY
                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ephydroidea; Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CG15733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CG15733 PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        reveals hypervariable sequences."; Nature 403:665-668(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-NCTC 11168;
MEDLINE-20150912; PubMed-10688204;
Parkhill J., Wren B.W., Mungall K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Campylobacter jejuni.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SLYD OR CJ0115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-OCT-2000 (TREMBLrel. 15, Created)
01-OCT-2000 (TREMBLrel. 15, Last seq
01-MAR-2001 (TREMBLrel. 16, Last ann
PEPTIDYL-PROLYL CIS-TRANS ISOMERASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AL139074; CAB72599.1; -. InterPro; IPR001179; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Campylobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGHDHHHGHGHG 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 66.8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PS50059; FKBP_PPIASE_3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0 (TrEMBLrel. 13, 0 (TrEMBLrel. 13, 1 (TrEMBLrel. 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            189 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                  PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20132 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    epsilon subdivision; Campylobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 55; DB 2; Pred. No. 0.13; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3; 2.
47B5F5D047549D7F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pathogen Campylobacter jejuni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hexapoda; Insecta;
a; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                               .G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
```

1.

```
AND ALLEY BY, MCINTOSH T.C., MCLEOD M.P., MCPHETSON D.,

RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,

RA Melson D.R., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,

RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,

RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,

RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,

RA Shue B.C., Siden-Kiamos I., Simpson M., Strong R., Sun E.,

RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,

RA Syliskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,

RA Wang Z.-Y. Wassarman D.A., Weinstock G.M., Weissebach J.,

RA Walliams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,

RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,

RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,

RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.;

RT "The genome sequence of Drosophila melanogaster.";

Science 287:2185-2195(2000).

DR EMBL, AE003488; AAF48149.1; -.

DR FlyBase; FBgn0030378; CG15733.

PR ProDom: PD0007044: - · ?
                  REPARENT SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SERVICES SER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
Redenbach M., Kieser H.M., Denapaite D., Eichner A., Cullum J., Kinashi H., Hopwood D.A.; Kinashi H., Hopwood D.A.; "A set of ordered cosmids and a detailed genetic and physical map the 8 Mb Streptomyces coelicolor A3(2) chromosome."; Mol. Microbiol. 21:77-96(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischman Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K., Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J., Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibeywam C., Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang-Y., Lin X., Mattei B., McIntosh T.C., McGeod M.P., McPherson D., Merkhlov G., Mishina N.V., Mcharry C., McGris T., McSchefi A.
                                                                                                                                                                                                                                                                                                           STRAIN-A3(2);
Parkhill J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seeger K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; Firmicutes; Actinobacteria; Actinobacteridae; Actinomycetales; Streptomycineae; Streptomycetaceae; St
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptomyces coelicolor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1998 (TrEMBLrel. 08, Cr
01-NOV-1998 (TrEMBLrel. 08, La
01-JUN-2000 (TrEMBLrel. 14, La
HYPOTHETICAL 33.6 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              086731;
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           086731
                                                                                                                                                  MEDLINE=97000351; PubMed=8843436;
                                                                                                                                                                                                                                                                                  Submitted
                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=1902;
                                                                                                                                                                                                                     SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HGHGLSHGMGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PD000094;
                                                                                                                                                                                                                                                                                  (SEP-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                               (SEP-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Harris
                                                                                                                                                                                                                                                                                                              Barrell
                                                                                                                                                                                                                        N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                                                                                                                          D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12244 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72.0%;
                                                                                                                                                                                                                                                                               to B
                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                  G., I
                                                                                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                         Rajandream M.A.;
e EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 54; DB 5
Pred. No. 0.12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     228A515283692840 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           314 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fleischmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Dunn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  K.A.,
                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₩.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RESULT
Q9VXG3
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SQ
                                                                                                                                                                                                                                                RA Ballew R. M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Charles R., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Ge Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Gersen C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Durbin K.J., Evangelista C.C., Ferrac C., Ferriara S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibegwam C.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibegwam C.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibegwam C.,
RA Hostin D., Houston K.A., Mowland T.J., Wei M.-H., Ibegwam C.,
RA Klamel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Klamel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Klamel B.E., Kodira C.D., Kraft C., Morris J., Moshrefi A.,
RA Mount S.M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Mount S.M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Melson D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Rahert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Rhine R. C. Siden-Kimmon T. Simpson M. Skinski M. P. Smith T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
             Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T. Spler E., Spradling A.C., Stapleton M., Strong R., Sun E., Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q. Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zhe Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smi Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.; "The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9VXG3;
Q9VXG3;
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazel R.G., Champe M., Pfeiffer B.D. Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ANXB11 OR CG9968.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CG9968 PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical SEQUENCE 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AL031515; CAA20646.1; InterPro; IPR000051; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18 ненеосненене
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              al protein
314 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33586 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 54;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7CA3288CC28FF007 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ų.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gocayne J.D.
.A., Galle R.
                                                                                                                                                                                                                                     Smith T.,
                                                                                                                                                   Yao Q.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Muscomorpha;
                                                                                                      Zheng
Smith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                      H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
G:
,
                                                                                                                                                                                                                                                                                                                                                                                                                                        Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

COMMON TO ALL ANNEXIN PROTEINS. A PAIR OF THESE

CONSENSUS SEQUENCE REPEATS MAY FORM

```
PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF TH
   RESULT
022671
ID
07
AC
07
DT
01
DT
01
DT
01
DT
01
DT
01
DT
02
DT
03
DT
04
DT
05
DT
06
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
07
DT
0
                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Ma
Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Ma
Best Loc
Matches
                                                                                        022671;
01-JAN-1998
01-JAN-1998
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Signal.
SIGNAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9M435;
01-OCT-2000
01-OCT-2000
01-OCT-2000
                                                         01-JAN-1998 (TrEMBLrel.
01-JAN-1998 (TrEMBLrel.
01-NOV-1998 (TrEMBLrel.
AG164 PROTEIN PRECURSOR
                                                                                                                                                                                                           022671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

TISSUE-IN VITRO SHOOT CULTURES;

TILSUE-IN VITRO SHOOT CULTURES;

Gil B., Pastoriza E.M., Ballester A., Sanchez C.;

"Identification of a phase-change related mRNA in derived from basal sprouts and crown branches.";

Submitted (NOV-1999) to the EMBL/GenBank/DDBJ data
EMBL; AJ271778; CAB72442.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00191; annexin; 4.

PRINTS; PR00196; ANNEXIN.

PRINTS; PR00334; KININGEN.

PRINTS; PR01217; PRICHEXTENSN.

PROSITE; PS00223; ANNEXIN; 3.

PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.

Annexin; Calcium/phospholipid-binding; Repeat.

Annexin; Calcium/phospholipid-binding; Repeat.

SEQUENCE 511 AA; 56214 MW; 74712A8F1C54283B
      Alnus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Embry
Magnoliophyta; eudicotyledons;
Fagales; Fagaceae; Quercus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quercus robur (English oak)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9M435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000130;
InterPro; IPR001464;
InterPro; IPR002395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AE003502; AAF48609.1; -
HSSP; P79134; 1AVC.
FlyBase; FBgn0030749; Anxb11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PHASE-CHANGE RELATED PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=38942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002965; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           147
                                                                                                                                                                                                                                                                                                                                                          44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                    _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ONE BINDING SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                              НGНННGНGНGНG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           нснсоснснснс
glutinosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
(Alder)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SITE FOR CALCIUM AND TO OTHER PROTEINS OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29
8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       72
75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15, Createa)
15, Last sequence update)
15, Last annotation update)
(OTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .7%;
                                                                                        05,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Embryophyta; Tracheophyta; Sp
dons; core eudicots; Rosidae;
                                                                                        Last
Last
                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 51; DB
Pred. No. 0.24
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 54; DB Pred. No. 0.53 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
8E45CABF40F00B6F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                     sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              THE ANNEXIN FAMILY.
                                                                                                                                                                                                           86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tracheophyta; Spermatophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
7.53;
                                                                                                                                                                                                           Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
,,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in oak shoot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cultures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

```
RESULT

OPERATOR

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID ZRC7

ID 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROOT NOBULES;
TISSUE-ROOT NOBULES;
Dobritsa S.V., Mullin B.C.;
In vitro expression of actinorhizal nodulin AgNOD-GHRP and demonstration of its toxicity ot Escherichia coli.";
(In) Stacey G., Mullin B.C., Gresshoff P.M. (eds.);
the Biology of Plant-Microbe Interactions:
Proceedings of the 8th International Symposium on Molecular
Proceedings of Interactions, pp.1-1, Unknown Publisher (1996).
  PRINTS; F
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9ZRC7;
01-MAY-1999
01-MAY-1999
01-MAY-2000
                                                            actinorhizal nodule development. Submitted (SEP-1996) to the EMBI EMBL; U69156; AAD00171.1; -.
                                                                                                                           Pawlowski K., Twigg P.G., Dobritsa S.V., (
"A nodule-specific gene family from Alnus
and histidine-rich proteins expressed in t
                                                                                                                                                                                                                                                                protein from Alnus Thesis (1993), The
                                                                                                                                                                                               TISSUE=ROOT NODULES;
                                                                                                                                                                                                                                                         "Isolation of a nodule-specific cDNA encoding protein from Alnus glutinosa."; Thesis (1993), The University of Tennessee, Kr
                                                                                                                                                                                                                                                                                                                                 Twigg P.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Magnoliophyta; eudico
Fagales; Betulaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Embr. Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGNT84.
Alnus glutinosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and nistration and development actinorhizal nodule development. Mol. Plant Microbe Interact. 10:
                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                   TISSUE-ROOT NODULES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTINORIZAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9ZRC7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pawlowski K., Twigg P., Dobritsa S., Guan "A nodule-specific gene family from Alnus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Magnoliophyta; eudicotyledons; Fagales; Betulaceae; Alnus. NCBI_TaxID=3517;
                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=3517;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and histidine-rich proteins expressed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=97348585;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  нднянунднднд
  PR00334; KININOGEN.
E 99 AA; 10567 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
8; Conserv
                                            IPR002395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; yta; eudicotyledons; core eudicots; Rosidae; eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            86 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 10, (TrEMBLrel. 13, NODULIN AGNOD-G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Alder).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=9204569;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29
86
9188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGNOD-GHRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       68.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alnus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Embryophyta; Trachecdons; core eudicots;
                                                                                     EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10:656-664(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
POTENTIAL.
D85B7EF888C8899A CRC64;
  2ACBE4D57C070E83 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Guan C., Mullin B.C.;
Alnus glutinosa encodes
d in the early stages o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tracheophyta; Sp
dicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
1.26;
                                                                                                                             Guan C., Mullin B.(
s glutinosa encodes
the early stages of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                Knoxville,
                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                        putative glycine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Spermatophyta;
e: eurosids I;
                                                                                                                                                                                                                                                                TN,
                                                                                                                                                                      B.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ues glycine-
s of
                                                                                                                                  Of
                                                                                                                                                  glycine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

Fri

r

Query Match

0

```
Qγ
                                                                                                            RA Ballew R.M., Basu A., Baxuendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Borttier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Harris N.L., Harvey D., Heiman T.J., Rei M.-H., Ibeyamm C.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., Liang Y., Lin X.,
RA Merkulov G., Milshina N.V., Mobarry C., Mozris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Mozris J., Moshrefi A.,
RA Reinert K., Remington K., Sannders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupskin M.P., Smith T.,
RA Reinert K., Remington K., Sannders R.D.C., Scheeler F., Shen H.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Yilskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Yel J., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RA Zheng X.H., Zhong W., Zhou X., Zhu X., Smith H.O.,
RA Zheng X.H., Roodage T., Worley K.C., Wu D., Yang S., Zhu X., Smith H.O.,
RA Zheng R. A., Myers E.M., Roodage T., Wang Y., Zhou X., Zhu S., Zhu X., Smith 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9W2X1;
Q9W2X1;
01-MAY-2000
01-MAY-2000
01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Sundon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Wan K.H., Dayle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Baldwin D., Baldwin J.F., Agbayani A., An H.-J., Andrews Pfannkoch C., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldwin D., Baldw
                                                                                        FlyBase; FBgn0030187; CG2961.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CG2961
                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGHRHVHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
8; Conserv
                                    PR00334;
                                                                 IPR002395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
   A,
KININOGEN.
LA; 33212 M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            68.0%;
   WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 51; DB Pred. No. 0.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
   8DB719D2AEB8B374 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    G.L.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

Query Match

.0%;

Score

51;

DB

υ ••

Length 348;

```
RESULT
Q9K9A
ID Q98
AC Q98
AC Q98
AC Q98
D1 01-
D7 01-
D7 01-
D8 ATT
GN BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC BH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4C
GOC GH4
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                              Query Match
Best Local
                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 081036;
081036;
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation updat
ATP/GTP-BINDING PROTEIN (IMPB/MUCB/SAMB FAMILY).
                                                                                                                                                                                                             STRAIN-C-125 / JCM 9153;
Takami H., Nakasone K., Taka
Submitted (MAR-2000) to the
EMBL; AP001516; BAB06460.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9K9A8;
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=CV. COLUMBIA;
Rounsley S.D., Lin X., Kaul S., Shea T.P., Fujii C.Y., Mason T.M.,
Shen M., Ronning C.M., Fraser C.M., Somerville C.R., Venter J.C.;
"Arabidopsis thaliana chromosome II BAC F19D11 genomic sequence.";
"Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
EMBL, AC005310; AAC33498.1; -.
EMBL, AC005310; AAC33498.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1998 (TrEMBLrel. 08
01-MAY-2000 (TrEMBLrel. 13
PUTATIVE ZINC TRANSPORTER.
                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Firmicutes; Bacillus/Staphylococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                             Bacillus halodurans.
                                                                                                                                                                                                                                                                                                                                                                                                                                    BH2741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9K9A8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brassicales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F19D11.8.
                                                                                                                                                                   InterPro; IPR001126; Pfam; PF00817; IMS;
                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=86665;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    74 HGYAQGHGYGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ب
1 HGHEQQHGLGHG 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGHSHGHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF01545; Cation_efflux;
NCE 398 AA; 43827 MW;
                                        Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 66.3
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brassicaceae;
                                                                                                                                                 IMS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                   46251 MW;
                                                              68.0%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68.0%;
                                                                                                                                                                                                                                                                                                                                                                   Bacillus/Clostridium group; us group; Bacillus.
                                                                                                                                                                                                                                                          Takaki Y.
                                                                                                                                                                                                                                                                                                                                                                 group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis.
                                                                                                                                                                                                                                   EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last annotation
                                                              Score 51; I
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 51; I
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 1.1;
L; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.
7E20E0B29237BB23 CRC64;
                                                                                                                                                   5721AC1D8FDD3722 CRC64;
                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                398
                                                          DB
1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
1.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₿
                                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ű
                                                                                Length 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 398;
                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

밁

242 HSHDKQKGIGHG

```
ş
 밁
                                                                                                                                                   RA Addms N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addms M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addms M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Barter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Abril J.F., Agbayani A., An H.-J., Andrews-Pfankoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Becson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Bottlier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Gerier J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Gerier B., Deckhar A., Deng Z., Mays A.D., Dew I., Dletz S.M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gann P., Harris M.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Reinert K., Remington K., Stungbeton M., Skupski M.P., Smith T.,
RA Ment S.M., Way M., Murphy B., Murphy E., Marpy D.M., Nelson D.L.,
RA Sine B.C., Stapleton M., Stungki M.P., Smith T.,
RA Sine B.C., Stapleton M., Stungki M.P., Smith T.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Reinstock G.M., Weissenbach J.,
RA Wang S.-Y., Wassarman D.A., Reinstock G.M., Weissenbach J.,
RA Wan
                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EG:84H4.4 PROTEIN.
EG:84H4.4 OR CG3081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-2000 (TrEMBLrel. 01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9W416;
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9W4I6
341 НСНННСНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pterygota; Neoptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=20196006; PubMed=10731132;
                       1 HGHEQQHGLGHG 12
                                                                       Similarity 8; Conserv
                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophilidae; Drosophila.
 352
                                                                                         68.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Endopterygota; Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation update)
                                                                       0;
                                                                                         Score 51; DB
Pred. No. 1.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   457
                                                                                                            DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brachycera; Muscomorpha;
                                                                       4.
                                                                                                          Length 457;
                                                                       Indels
                                                                       0;
                                                                       Gaps
                                                                       0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RA Adams M.D. (Calniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D. (Calniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA Adams M.D. (Calniker S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Barandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wann K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wann K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Ballew R.M., Basu A., An H.-J., Andrews-Pfannkoch C., Badwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davoney T. Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dorlor G., Evrietta C.C., Ferriaz C., Ferriar S., Fleischmann W.,
RA Dorlor G., Parriation P., Garran G., Calbart G. M.,
RA Charlor G., Parriation P., Garran G., Calbart G. M.,
RA Charlor G., Parriation P., Garran G., Calbart G. M.,
Ra Calbart G. M., Carlor G., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., Ferria C., 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9W2S4;
Q9W2S4;
01-MAY-2000 (TrE
01-MAY-2000 (TrE
01-JUN-2000 (TrE
CG9732 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     077280
                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc

Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CG9732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE 605 AA; 64947 MW; B06C84AC4D7D2C84 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
Ferraz C., Vidal S., Brun C., Bucheton A., Demaille J.G.;
Ferraz C. Vidal S., Brun C., Bucheton A., Demaille J.G.;
Sequencing the distal X chromosome of Drosophila melanogaster.";
Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopteryota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-NOV-1998 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
EG:84H4.4 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1998
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EG:84H4.4 OR CG3081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341 НСНННСНСНСНС 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           enos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity hes 8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 HGHEQQHGLGHG 12
Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel. 13, ) (TrEMBLrel. 13, ) (TrEMBLrel. 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68.0%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ,80
/80
/80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 51;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
1.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ن</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                      Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
KE4_PIG
         닭
                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sõ
                                       Best Loc
Matches
                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                             NON_TER
                                                                                                   TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                           KE4_PIG
Q29175;
                                                                                                                                                                      the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See
                                                                                                                                                                                                                                      class II region.";
Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                       STRAIN-Belgian Landrace;
Chardon P., Rogel-Gaillard C., Peelman L.J., Yerle M., Renard C.,
                                                                                                                                                                                                                                                                                                        Winteroe A.K., Fredholm M., Davies W., "Evaluation and characterization of a library: analysis of 839 clones."; Mamm. Genome 7:509-517(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                   01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence up
01-OCT-2000 (Rel. 40, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                          EMBL;
                                                                                                                                                 EMBL; F14787; CAA23256.1; -.
                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                          SEQUENCE OF 125-155 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                                                                                                                              Sus scrofa (Pig)
                                                                                                                                  Transmembrane.
                                                                                                                                                                                                                                                                                                                                                  TISSUE-Small
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 1-124 FROM
                                                                                            NON_CONS
                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                         MEDLINE=96327607; PubMed=8672129;
                                                                                                                                                                                                                                                                                                                                                                                                             HISTIDINE-RICH PROTEIN KE4 (FRAGMENTS)
                                                                                                                                                                                                                                                          Physical organization of the swine major histocompatibility complex
                                                                                                                                                                                                                                                                    Vaiman M.;
         49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGH 11
                                                                                                                                                                                                                             SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE). SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
         HGHSHGHGHAHG
                       HGHEQQHGLGHG
                                                                                                                                                                                                     SWISS-PROT entry is copyright. It is produced through a collaboration -
sen the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGHSHAHGHGH
                                                                                                                                        AF146397; AAD44801.1;
                                      Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9XT01;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 469
                                                                            1
19
49
81
124
155
                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                intestine;
                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          66
         60
                       12
                                                                                    1
39
59
86
125
155
                                                                             16840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50118
                                              50.
58.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                       N.A.
                                             . 3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 68;
                                                                             WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Œ;
                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                  POTENTIAL.
HIS-RICH.
POLY-GLU.
                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                             56354DE3CAAE4524 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6504A1EF5AA6A5B9 CRC64;
                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                         of a porcine small intestine cDNA
                                             No. 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46;
No:
                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                             There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DВ
?.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ā
                                                                                                                                                                                       as its content
                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>ب</u>
٠٠
                                                                                                                                                                              Usage
                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                     Length 155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 469;
                                                                                                                                                                                                    and the
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                              bу
                                                                                                                                                                                                                                                                                                                                                                               Sus.
                                                                                                                                                                                                                                                                                                                                                                                      Euteleostomi;
                                                                                                                                                                               and
                                                                                                                                                                              for
                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                     Gaps
                                                                                                                                                                               commercia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                       ö
                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 15
BR3A_MOUSE
PRINTS; PI
              DOMAIN
DOMAIN
                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                         <del>-</del> -
SEQUENCE
       DNA_BIND
                                              DOMAIN
                                                     Developmental
                                                                    PROSITE;
                                                                                                                                                                                                              use
                                                                                                                                                HSSP; P10037;
```

```
BR3A_MOUSE STAN
P17208;
01-AUG-1990 (Rel. 1
01-OCT-1996 (Rel. 3
01-OCT-2000 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; $69350; AAB30577.2;
EMBL; $51959; CAA36218.1;
PIR; $09237; $09237.
                                                                                                                                                                                                                                                                                                                    Pfam; PF00046; homeobox; 1. Pfam; PF00157; pou; 1.
                                                                                                                                                                                                                                                                                                                                                                  MGD; MGI:102525; Pou4f1.
InterPro; IPR000327; -.
InterPro; IPR001356; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Goldsborough A., Ashworth A., Willison K.;

"Cloning and sequencing of POU-boxes expressed in mouse testis.";

NUCLEIC Acids Res. 18:1634(1990).

-i- FUNCTION: PROBABLE TRANSCRIPTION FACTOR WHICH MAY PLAY A ROLE IN

THE REGULATION OF SPECIFIC GENE EXPRESSION WITHIN A SUBSET OF

NEURONAL LINEAGES. MAY PLAY A ROLE IN DETERMINING OR MAINTAINING

THE IDENTITIES OF A SMALL SUBSET OF VISUAL SYSTEM NEURONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      developmental control genes.";
Cytogenet. Cell Genet. 66:267-271(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-1996 (Rel. 34, Last sequence update) 01-OCT-2000 (Rel. 40, Last annotation update) BRAIN-SPECIFIC HOMEOBOX/POU DOMAIN PROTEIN 3A POU4F1 OR BRN3 OR BRN-3.
                                                                                                                                                                                                                                  PROSITE; PS00465;
                                                                                                                                                                                                                                                          PROSITE; PS00035;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                       Transcription regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=90221898; PubMed=1970171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 286-401 FROM N.A. STRAIN=T6/TW1; TISSUE=Testis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=94215319; PubMed=8162704;
Theil T., Zechner U., Klett C., Adolph S., "Chromosomal localization and sequences of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: STR
TO CLASS-4 POU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBCELLULAR LOCATION: NUCLEAR.
TISSUE SPECIFICITY: BRAIN, PERIPHERAL SENSORY NERVOUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RETINA. IN THE ADULT NERVOUS SYSTEM BRN-3.0 PREDOMINATES IN THE MEDIAL HABENULA, SUPERFICIAL GRAY OF THE SUPERFOR COLLICULUS, NUCLEUS, MESIALTO NUCLEUS OF THE TRIGEMINAL GANGLION, NUCAMBIGUUS, INFERIOR OLIVARY NUCLEUS, AND PERIPHERAL SENSORY
                               regula.
Frotein. 57 66
100 10
130 10
205
265
                                                                                                                                                                                                                                                                                                     PR00028; POUDOMAIN
                                                                                                                                                                                                            PS50071;
                                                                                                                                                                                                                                                                             PS00027;
  357
421 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                          1AU7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRONG TO OTHER "POU" TRANSCRIPTION FACTORS. BELONGS
                                                                                                                                                                                                                                  POU_1; 1.
POU_2; 1.
                                                                                                                                                                                                                                                                                HOMEOBOX_1; 1.
                                                                                                                                                                                                          HOMEOBOX_2;
    42781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chordata; Craniata; Vertebrata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
    MW.
                                                                                                                                                                                    Nuclear protein; DNA-binding; Homeobox;
                                                                 POU-IV BOX.
POLY-HIS.
GLY-RICH.
ALA-RICH.
                          HOMEOBOX
34EC99D789EBE939 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the murine Brn-3 family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Moeroey T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (BRN-3A) (BRN-3.0).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a collaboration -
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUCLEUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
```

```
RESULT 12
KE4L_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                     WormPep; H13N
Hypothetical
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                               CARBOHYD
CARBOHYD
                                                                                                               TRANSMEM
TRANSMEM
                                                                                                                                                    TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                             KE4L_CAEEL Q9XTQ7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
TRANSMEM
TRANSMEM
                                                                                  CARBOHYD
                                                                                                                                                                                                                                         modified
                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                             This
                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HYPOTHETICAL KE4-LIKE PROTEIN H13N05.5 IN CHROMOSOME
                                                                                             DOMAIN
                                                                                                       TRANSMEM
                                                                                                                                  TRANSMEM
                                                                                                                                             TRANSMEN
                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                               entities
                                                                                                                                                                                                                                                                   between
                                                                                                                                                                                                                                                                                          Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE).
-!- SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                        Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                  STRAIN-BRISTOL
                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                      Rhabditidae;
                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                        ennard N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     134 HDNDQEHGHGHG 145
                                                                                                                                                                                                                                                        ween the Swiss Institute of Bioinformatics European Bioinformatics Institute. There a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HGHEQQHGLGHG
                                                                                                                                                                                          299942; Ca
                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         l Similarity
7; Conserv
Similarity 7; Conserv
                                                                                                                                                                                                                           non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/
                                          1 protein;

27 49 69

29 214 23;

247 26

297 31

386 40

429 47

463 4

92 1

7 7

237

379

488

515 AA;
62.7%;
nilarity 58.3%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      227
333
424
439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    114
244
279
140
                                                                                                                                                                                                                                                                                                                                                                     etazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163
                                                                                                                                                                                                  CAB17070.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΑĄ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                         CE18815
                                                                                           234
234
267
267
317
406
449
483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 227
334
424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     133
265
295
148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169
                                             55500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       48154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58
                                                                                                                                                                               Transmembrane; Glycoprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .38;
                                                                                                                                                                                                  ·.'
                                             ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MW;
Score 47; DB Pred. No. 2.1; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COORDINATION OF CU
                                            HIS-RICH.

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-17D7E854F4E1DAAF CR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 48;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A <- I
-> IH
                                                                                                               POTENTIAL. POTENTIAL.
                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HIS-RICH; COULD COORDINATION OF HIS-RICH; COULD
                                                                                                     POTENTIAL.
                                                                                                                                  POTENTIAL.
                                                                                                                                           POTENTIAL.
                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AC88AAA5F2EE4AED CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              > E (IN REF. 1)
-> RV (IN REF. 1)
> V (IN REF. 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        515
                                                                                                                                                                                                                                              There are no restrictions ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
        .1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . 1).
~F. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BE INVOLVED IN COBALT IONS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BE INVOLVED COBALT IONS.
5
                 Length 515;
                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 439
                                                    .) (POTENTIAL).
.) (POTENTIAL).
.) (POTENTIAL).
.) (POTENTIAL).
                                             CRC64;
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                                 EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H
                                                                                                                                                                                                                                                                             Ø
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                    collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
Gaps
                                                                                                                                                                                                                                                         on
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
```

```
RESULT 13
KE4_HUMAN
      KE4_HUMAN STANDARD 92504; Q9UIQO; Q9E504; Q9UIQO; Q1-OCT-2000 (Rel. 40, C01-OCT-2000 (Rel. 40, L01-OCT-2000 (Rel. 
                                                              CARBOHYD
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                                                                                                                                TRANSMEM TRANSMEM
                                                                                                                                                                                                                                                                                       TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                           MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tubby B.;
Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ando A., Kikuti Y.Y., Shigenari A., Kawata H., Okam Chen L., IKemura T., Abe K., Kimura M., Inoko H.: "CDNA Cloning of the human homologues of the mouse at the centromeric end of the human MHC region.";
                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (DEC-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Kidney;
MEDLINE-97001166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HKE4 OR RING5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HISTIDINE-RICH MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND PANCREAS.
-!- SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRA-!- TISSUE SPECIFICITY: MAJOR EXPRESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Vergara A., Lana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           flanking region.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Encio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Molecular cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Н
                                                                                                                                                                                                                                                                                                                                                   601416;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHEQQHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HGHSHSHGHSHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           non-profit institutions as long and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35:600-602(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (OCT-1998)
                                                                                                                            10
138
169
214
214
381
417
417
238
30
238
                                                                                                                                                                                                                                                                                                            Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ι.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=8812499;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                        158
189
234
401
436
114
263
330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Corella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN KE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ne EMBL/GenBank/DDBJ databases.
INTEGRAL MEMBRANE PROTEIN (PROBABLE).
AJOR EXPRESSION IN PLACENTA, LUNG, KIDNEY
N-LINKED (GLCNAC. . .) (POTENTIAL).
A -> G (IN REF. 1 AND 2).
E -> G (IN REF. 1 AND 2).
S -> T (IN REF. 1 AND 2).
CALLTEGGAVGSEIAGGAGPGWYLFTAGGFIYVATVSYLF
ELLREASFLQSLLEVLGLLGGVIMMVLIAHLE -> VPFSL
KEEQWTYKLQVYQYLAGSCHLLQVALST (IN REF. 1
AND 2).
                                                                                                                                                             POTENTIAL.
HIS-RICH.
HIS-RICH.
                                                                                                                                                                                                                         POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Miguel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     c.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              human KE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Migliaccio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okamoto N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ke4 and Ke6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 is
for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Shiina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ın
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                no
```

```
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hastin D., Houston K.A., Howland T.J., Wel M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kinmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lisko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Herkulo G., Mishina N.V., Mobarry C., Moris J., Mepherson D.,
RA Merkolo D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spires E., Spradling A.C., Stapleton M., Strong R., San E.,
RA Sylizkas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhang G., Zhano Q., Zheng L.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter I.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.,
RA Science 287:215-2155(2000)
DR EMBL, AE003451, AAR46615.1;
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB9003027; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB90030227; CG9732.
DR FILYBase; FB9003027; CG9732.
DR FILYBase; FB9003027; CG9732.
DR FILYBase; FB9003027; CG9732.
DR FILYBase; FB9003027; CG9732.
DR FILYBASE; C
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq length: Maximum DB seq length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A_Geneseq_0601:*

1: /SIDSB/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDSB/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqp/AA1982.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
4: /SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
6: /SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
8: /SIDSB/gcgdata/geneseq/geneseqp/AA1989.DAT:*
9: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
10: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
11: /SIDSB/gcgdata/geneseq/geneseqp/AA1992.DAT:*
12: /SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
13: /SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
14: /SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
15: /SIDSB/gcgdata/geneseq/geneseqp/AA1993.DAT:*
16: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
17: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
18: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
19: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
10: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
11: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
12: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-437-912-2
68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIDSB/gcgdata/geneseq/geneseqp/AA198.DAT:*

SIDSB/gcgdata/geneseq/geneseqp/AA198.DAT:*

SIDSB/gcgdata/geneseq/geneseqp/AA198.DAT:*

SIDSB/gcgdata/geneseq/geneseqp/AA198.DAT:*

SIDSB/gcgdata/geneseq/geneseqp/AA198.DAT:*

SIDSB/gcgdata/geneseq/geneseqp/AA199.DAT:*

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6, 2001, 09:09:16; Search time 113.68 Seconds (without alignments) 6.399 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2000000000
cul
cul
cul
cul
cul
hum
hum
hum
hum
hum
of
```

		dР			SUMMAKLES	
Result No.	Score	Query	Query Match Length DB	DB B	ID	Description
1		100 0	13	3 ¦	33401003	1
21	500	100.0	20	17	AAW07628	Human high polyme
w	83	100.0	28	21	AAY81996	high
4	83	100.0	47	21	AAY93345	chain of
ۍ.	68	100.0	55	21	AAY93346	Light chain of h
6	83	100.0	62	21	AAY93348	chain of
7	68	100.0	63	16	AAR75186	Partial peptide o
æ	68	100.0	83	21	AAY93347	Light chain of h
9	68	100.0	94	21	AAY93351	Light chain of h
10	68	100.0	131	16	AAR75181	Partial peptide o
11	68	100.0	179	21	AAY93353	Light chain of h

45	44	43	42	41	40	39	3 <b>8</b>	37	36	35 5	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
37	37	37	38	38	38	38	38	38	38	39	39	39	39	39	39	40	40	40	40	. 40	41	42	42	42	42	42	42	42	42	42	64 .	68	68
54.4	54.4	٠	٠	•	•	•	•		55.9		•	57.4	•	•	•		•	•	58.8	•	•			٠				•					
183	148	142	2032	2032	2032	889	593	248	238	909	613	613	613	540	540	1025	413	278	217	184	538	135	135	135	135	107	107	107	107	57	16	255	186
21	21	21	20	20	20	20	19	21	22	15	21	20	20	21	21	16	21	21	21	21	12	22	21	20	18	20	20	18	18	21	21	21	21
AAG11592	AAG11593	AAG11594	AAY00242	AAY00240	AAY00238	AAY00241	AAW62835	AAB41673	AAB61611	AAR50092	AAB28407	AAW93828	AAW93823	AAY90602	AAY90601	AAR70126	AAB41846	AAG28212	AAG28213	AAG28214	AAR15502	AAB60659	AAY92910	AAY32504	AAW30891	AAW83929	AAY49535	AAW26581	AAW27561	AAG01773	AAY81998	AAY93342	AAY93349
Arabidopsis thalia	Arabidopsis thalia	Arabidopsis thalia	-	Enterococcus faeca		Enterococcus faeca	Zea mays antimicro	Human ORFX ORF1437	Human protein HP03	Humanised anti-CEA	Escherichia coli b		E. coli GUS protei	Candida tropicalis	Candida tropicalis	Serum opacity fact	Human ORFX ORF1610	Arabidopsis thalia		Arabidopsis thalia	Cytochrome P 450 C	lar r	-		cytostatin	growth inhi	Human cytostatin I	cytostatin	-	Human secreted pro	two-chair	Light chain of hum	Light chain of hum

## ALIGNMENTS

```
RESULT
AAY81993
WPI; 2000-376483/32.
                                                                                                                                                                                                                                                                                                                                                 two-chain high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                       05-NOV-1999;
                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human high molecular weight kininogen domain 5 fragment #2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY81993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY81993 standard; peptide; 12
                                                                                  (MCCR/) MCCRAE R K.
                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                 18-MAY-2000.
                                                                                                                                                                                                                                                                     WO200027866-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         _
                                                                                                                                              98US-0107833.
                                                                                                                                                                                       99WO-US26419.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
```

A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis

```
RESULT
AAW07628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Has or a synthetic compound comprising part or all of the present sequence may be used in a pharmaceutical composition for inhibiting anylogenesis. Angiogenesis occurs in a number of disease states, such cas tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit and cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                      Sequence
                                                                              The present peptide is derived from residues 402-498 of the human high polymer quininogen L-chain. It was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                                             Cell adhesion inhibiting peptide(s), used as cancer metastasis inhibitor - comprises partial amino acid sequence of human high polymer quininogen L chain
                                                                                                                                                                                                                     WPI; 1996-421988/42.
                                                                                                                                                                                                                                                                                                                                                             JP08208692-A
                                                                                                                                                                                                                                                                                                                                                                                                               Human; high polymer; quininogen; L-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                         Human high polymer quininogen L-chain derived peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW07628;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW07628 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 5;
                                                                                                                                  Example; Page 8; 14pp; Japanese
                                                                                                                                                                                                                                                (SUMU ) SUMITOMO SEIYAKU KK
                                                                                                                                                                                                                                                                                                      28-SEP-1995;
                                                                                                                                                                                                                                                                                                                                  13-AUG-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phase synthesis methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
mes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ldddlehggghv 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Page 28;
                                                      20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A,
                                                                                                                                                                                                                                                                           94JP-0259451.
                                                                                                                                                                                                                                                                                                      95JP-0276418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20
Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
DB 17;
1.8e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               le-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
              Length 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

**ا** ک

Qy

LDDDLEHQGGHV 12 1ddd1ehqgghv

밁

17 ۲

```
RESULT
AAY81996
ID AAY8
XX
AC AAY8
XX
AC AAY8
XX
AC AAY8
XX
XX
AC AAY8
XX
                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                 The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kb glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting anglogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit anglogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
Best Local Similarity Matches 12; Conserv
                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      two-chain high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                    Claim 8; Page 28; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                        methods.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200027866-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human high molecular weight kininogen domain 5 fragment #5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY81996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY81996 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UTEM ) UNIV TEMPLE.
(MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                          28
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                           ₽
E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0107833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide;
              100.0%;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
              Score 68; DB 21;
Pred. No. 2.6e-05;
 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                             Length 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
0
```

J,

RESULT

4

```
X B X B X B
                                                                                                                                                      Ş
                                                                            AAY93346
                                                                                       RESULT
                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY93345
                                                                                                                                                                                Best Loc
Matches
                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                      The present sequence represents a fragment of the light chain of huma high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (DUPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
            04-SEP-2000
                                    AAY93346;
                                                             AAY93346
                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 3; Page 36; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration \,\cdot\,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY93345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAY93345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Mous/)
                                                                                                                                                                                             Local
                                                                                                                             6
                                                                                                                                                       Ц
                                                                                       σ
                                                                                                                                                       LDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sapiens.
                                                                                                                             ldddlehggghv
                                                                                                                                                                                 l Similarity
12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UNIV TEMPLE.
DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOUSA A S.
                                                             standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard; peptide;
                                                                                                                                                                                                                                                 47
                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
          (first entry)
                                                                                                                                                                                                                                                 Ã,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US26377.
                                                                                                                                                       12
                                                            peptide;
                                                                                                                                                                              100.0%; S
100.0%; P
ative 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47
                                                              55
                                                                                                                                                                              Score 68; DB 21;
Pred. No. 4.7e-05;
; Mismatches 0;
                                                              B
                                                                                                                                                                                                       Length 47;
                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fragment
                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                compound
                                                                                                                                                                                 Gaps
                                                                                                                                                                                 0,
```

```
RESULT
AAY93348
밁
                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit of endothelial cells with compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (DUPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                   Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                           04-SEP-2000
                                                                                                                                                                                                  AAY93348
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                              Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                     inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                  Local Similarity
nes 12; Conserv
                                                                                                                                                                                                                                                                            42
                                                                                                                                                                                                                                                                                                      1 LDDDLEHQGGHV
                                                                                                                                                                                                                              σ
                                                                                                                                                                                                                                                                       4; Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ) UNIV TEMPLE.
) DUPONT PHARM (
) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSA A S.
                                                                                                                                                                                                   standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                          55
                                                                                                                                                                                                                                                                                                                                 100.0%; ilarity 100.0%; Conservative
                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36;
                                                                                                                                                                                                                                                                                                                                                                                                          ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US26377.
                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                                                                                                                      0f
                                                                                                                                                                                                                                                                            53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4lpp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ဗ
                                                                                                                                                                                                                                                                                                                                                                                                                                      endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English
                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                               Score 68; DB 21;
Pred. No. 5.6e-05;
                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      to vitronectin.
                                                                                                                                                                                                                                                                                                                                                           Length 55;
                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  compound
                                                                                                                                                                                                                                                                                                                                 Gaps
```

0

Synthetic. Homo sapie

sapiens

WO200027415-A2

```
RESULT
AAR75186
                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                      QY
                                                                                                                                                                                                                                                                                                                                                                                                                                       SXCCCCCCCCCCXPXPTXRXPXXRXFXX
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                               Matches
WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be
                        (FARH ) HOECHST JAPAN KK
                                                                      17-SEP-1993;
                                                                                               28-MAR-1995
                                                                                                                      JP07082172-A
                                                                                                                                            Homo sapiens
                                                                                                                                                                               high molecular
                                                                                                                                                                                                   Partial peptide of human HMW kininogen fragment
                                                                                                                                                                                                                           05-DEC-1995
                                                                                                                                                                                                                                                                         AAR75186 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 6; Page 37; 41pp; English
                                               17-SEP-1993;
                                                                                                                                                                    wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                  21
                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
les 12; Conserv
                                                                                                                                                                                                                                                                                                                                                        1 LDDDLEHQGGHV
 1995-158909/21
                                                                                                                                                                                                                                                                                                                              2000-376306/32.
                                                                                                                                                                   treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ) UNIV TEMPLE.
) DUPONT PHARM CO.
) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WR, Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                         62
                                                                                                                                                                                                                                                                                                                                                                             100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sequence represents an analogue of the light chain
                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                         A,
                                                                                                                                                                  weight; agent; h
                                                93JP-0230616
                                                                        93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377
                                                                                                                                                                                                                                                                                                                                                      12
                                                                                                                                                                                                                                                                                                                                  32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                O.f
                                                                                                                                                                                                                                                                                                                                                                                                                                                               endothelial cells to vitronectin.
                                                                                                                                                                   bovine;
                                                                                                                                                                 kininogen; fra
bovine; growth
                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                          Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                            fragment;
                                                                                                                                                                   promotion;
                                                                                                                                                                                                                                                                                                                                                                             ; DB 21;
. 6.4e-05;
ches 0;
                                                                                                                                                                              1.2;
                                                                                                                                                                  : 1; 2; partial; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                     62;
                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of human
                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ţ
                                                                                                                                                                                                                                                                                                                                                                              0,
```

1

```
AAY93347
ID AAY9
XX
    PF
                                                                                                                                                                                                                                                                                                                                                                     ΧX
                                                                                                                                                                                                                                                                                                                                                                                                                         XXX XXX DEXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for
                                                                                                                                                                                                                                                                         (UTEM )
(DUPO )
(COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                        Claim
                                                                                                                                                                               Method for inhibiting
                                                                                                                                                                                                                                   Colman WR,
                                                                                                                                                                                                                                                                                                                                                         09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             endothelial cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-SEP-2000
                                                                                                                                                                  that inhibit
                                                                                                                                                                                                                                                                                                                                                                                                            W0200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plasma kallikrein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; high molecular weight kininogen; glycoprotein; endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY93347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY93347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        have
                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human kininogen fragments 1.2, 1 and 2, are used agent compsns. and act as the active component.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR75186 is a partial peptide corresponding to human kininoge fragment 1, amino acids 458-520. Partial peptides of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      wound treating agent contg. a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 ldddlehqgghv 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                         2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      growth promotion
                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12;
                                                                                                                                                                                                                                                             MOUSA A S.
                                                                                                                                                                                                                                                                       DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                   UNIV TEMPLE.
                                                                                                                                        Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         63
                                                                                                                                                                                                                                    Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
ilarity 100.0%;
Conservative (
                                                                                                                                                               nhibiting endothelial cell proliferation, using compound endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                        37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                              98US-0107844
                                                                                                                                                                                                                                                                                                                                                         99WO-US26377.
                                                                                                                                     41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           heavy chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        activity
                                                                                                                                     English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a partial peptide of kininogen
of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           light
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 16;
6.5e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cell migration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in wound treating
The fragments are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

\*1

di.

can also be be used to

0

```
SSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93351
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                   The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to the better that the compounds can also be used to the the compounds can also be used to the the compounds can also be used to the the compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                              (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                             Method for inhibiting endothelial cell proliferation, using that inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                  WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                           Colman WR, Mousa AS,
                                                                                                                                                                                                                                                                                                                                                                                                                                         09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY93351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inhibiting endothelial cell proliferation. The compounds used for inhibiting angiogenesis. The compounds can also inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY93351 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                10-NOV-1998;
                                                                           inhibit migration
                                                                                                                                                                                                                                                                                                                                                    (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ldddlehggghv
                                                                                                                                                                                                                                       8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity 100 12; Conservative
                                                                                                                                                                                                                                                                                                                                                              UNIV TEMPLE.
DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                   MOUSA A S.
                                                                                                                                                                                                                                       Page
                                                    94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                    AA
,
                                                                                                                                                                                                                                       39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ą
                                                                                                                                                                                                                                                                                                                                                                                                                98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US26377.
                                                                            o
f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53
                                                                                                                                                                                                                                      41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
  100.0%;
                                                                          endothelial cells to vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
  Score 68;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 68; DB 21;
Pred. No. 8.8e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
  DB 21;
0.0001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        glycoprotein; endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; analogue; angiogenesis; cell migration; vitronec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
            Length 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 analogue
                                                                                                                                                                                                                                                                         compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
RESULT AAY93353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR75181
ID AAR
멍
                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                              8 x 8 8 8 8 8 8 8 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                             ¥ ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                             AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine human kininogen fragments 1.2, 1 and 2, are used in wound treat agent compons. and act as the active component. The fragments useful in wound treating because they have growth promotion act
Synthetic
                      endothelial
                                Human; high molecular weight kininogen; glycoprotein; endothelial cell;
plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                Light chain
                                                                                        04-SEP-2000
                                                                                                              AAY93353;
                                                                                                                                  AAY93353 standard;
                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                     on fibroblasts
                                                                                                                                                                                                                                                                                                                                                                                                  Claim
                                                                                                                                                                                                                                                                                                                                                                                                                       A wound treating agent contg. a partial peptide have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Partial peptide of human HMW kininogen fragment 1.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR75181 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (FARH ) HOECHST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               high molecular
wound treating
                                                                                                                                                                                            90
                                                                                                                                                                                                                                     Local Similarity
nes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42
                                                                                                                                                        11
                                                                                                                                                                                                              1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                _
                                                                                                                                                                                         ldddlehqgghv 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ldddlehqgghv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12;
                                                                                                                                                                                                                                                                                                                                                                                                Page
                                                                                                                                                                                                                                                                                              131 AA;
                                                                 of human high molecular weight kininogen analogue
                     cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                 7; 8pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93JP-0230616.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                agent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         weight;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           53
                                                                                                                                 peptide; 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  peptide; 131
                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                 Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kininogen;
                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ogen; fragment; 1.2; 1; 2; partial;
growth promotion; fibroblast.
                                                                                                                                                                                                                                     Score 68; DB 16;
Pred. No. 0.00015;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                               growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                          The fragments are
                                                                                                                                                                                                                                                                                                                                                                                                                                   of kininogen
                                                                                                                                                                                                                                                          Length 131;
                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

0,

```
PR YXX
                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                               AAY93349
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                          09-NOV-1999;
                                                   18-MAY-2000
                                                                             WO200027415-A2
                                                                                                                    Synthetic.
                                                                                                                                               endothelial
                                                                                                                                                          Human; high molecular weight kininogen; glycoprotein; endothelial cell;
plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                 Light chain of
                                                                                                                                                                                                                             04-SEP-2000
                                                                                                                                                                                                                                                       AAY93349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 11; Page 40-41; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration \,
 10-NOV-1998;
                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                AAY93349 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UTEM )
                                                                                                                                                                                                                                                                                                                                                 14
                                                                                                                                                                                                                                                                                                           12
                                                                                                                                                                                                                                                                                                                                                                            1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                ldddlehqgghv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                     l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DUPONT PHARM CO
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     179
                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                           (first entry)
 98US-0107844.
                                                                                                                                                                                               human high molecular weight kininogen
                         99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US26377.
                                                                                                                                            proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                 25
                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                    Score 68; DB 21;
Pred. No. 0.00021;
; Mismatches 0;
                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                           Length 179;
                                                                                                                                                                                                 analogue
                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT
AAY93342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                  (UTEM )
(DUPO )
(COLM/)
                                                                                                                                                                                                                                                                                            Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Where it is cleaved by plasma kallikrein into heavy and light chains.
                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                        Light chain of human high molecular weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                       04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                    AAY93342;
                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93342 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 9; Page 38; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Colman WR,
                                                                                                                                                                                                        18-MAY-2000
                                                                                                                                                                                                                                    WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Method for inhibiting endothelial cell that inhibit endothelial cell migration
                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ldddlehqgghv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2000-376306/32.
                                                                                DUPONT PHARM CO
COLMAN W R.
                                                                                                                UNIV TEMPLE.
                                                                    MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                             98US-0107844
                                                                                                                                                                           99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        32
                                                                                                                                                                                                                                                                                                                                                                                                                                               protein; 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 68; DB Pred. No. 0.0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            proliferation, using compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ВB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 21;
.00022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

WPI; 2000-376306/32

Colman WR,

Mousa AS

Þ

```
RESULT
AAY8199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    that
The present sequence is derived from human two-chain high molecular weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells. HW or a synthetic compound comprising the present sequence may be
                                                                                                                                     A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                         two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY81998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY81998 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration -
                                                                                           Claim 9;
                                                                                                                                                                                   WPI; 2000-376483/32
                                                                                                                                                                                                                 McCrae
                                                                                                                                                                                                                                                                                                                       05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                     18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                 WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                          rheumatoid arthritis; endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human two-chain high molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2000
                                                                                                                                                                                                                                                                                         10-NOV-1998;
                                                                                                                                                                                                                                             (UTEM ) UNIV TEMPLE (MCCR/) MCCRAE R'K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity hes 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ldddlehqgghv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         high molecular weight kininogen;
                                                                                         Page 28; 52pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequence represents the light chain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                         98US-0107833.
                                                                                                                                                                                                                                                                                                                       99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 68; DB 21;
Pred. No. 0.00031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          high molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    fragment #7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
88888888888888888
AAG01773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                             of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs were prepared from total human RNAs or polyA+ RNAs derived from 30 different tissues. EST sequences usually correspond mainly to the 3' untranslated region (UTR) of the mRNA because they are often obtained from oligo-dT primed cDNA libraries. Such ESTs are not well suited for isolating cDNA sequences derived from the 5' ends of mRNAs and even in those cases where longer cDNA sequences have been obtained, the full 5' UTR is rarely included. 5' ESTs are derived from mRNAs with intact 5' under the sequences have been obtained.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain occular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the composition may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis methods.
                                                                                                                                                                                                                The present sequence is a polypeptide encoded by one of a large number of 5' ESTs derived from mRNAs encoding secreted proteins. The 5' ESTs
                                                                                                                                                                                                                                                                                                     New nucleic acid that is a 5' expressed sequence to
obtaining cDNAs and genomic DNAs that correspond to
diagnostic, forensic, gene therapy and chromosome
                                             ends and can therefore be used to obtain full length cDNAs and genomic DNAs. 5' ESTs are also used in diagnostic, forensic, gene therapy and chromosome mapping procedures. They are used to obtain upstream
                                                                                                                                                                                                                                                                       Claim 13; SEQ ID 5854; 71pp + CD-ROM; English.
                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-500381/45.
N-PSDB; AAC01779.
                                                                                                                                                                                                                                                                                                                                                                                                                           Dumas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-FEB-2000; 2000EP-0200610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EP1033401-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human secreted protein, SEQ ID NO: 5854.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAG01773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAG01773 standard;
                              regulatory sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 ldddiehgggh 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 LDDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                         Milne Edwards J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5' EST; expressed sequence tag; secreted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         94.18;
ilarity 100.08;
Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 chromosome mapping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-0122487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Protein;
                               and to design expression and secretion vectors
                                                                                                                                                                                                                                                                                                                                                                                                                           Duciert A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 64;
l. No.
                                                                                                                                                                                                                                                                                                                                                                                                                           Giordano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21;
7e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                           Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 16
                                                                                                                                                                                                                                                                                                     tag (5' EST) for
to 5'ESTs and for
e mapping procedures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA isolation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
```

Sequence

```
Query Match
Best Local Similarity 54.5%; Pred. No. 1.9;
Matches 6; Conservative 3; Mismatches 2; Indels 0; Gaps 0;

Qy 2 DDDLEHQGHV 12
| ::|||| | 1;
Db 40 dkeiehggnhm 50

Search completed: July 6, 2001, 09:09:17

Job time: 123 sec
```

ď

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Issued_Patents_AA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query
         July 6, 2001, 09:10:20; Search time 56.74 Seconds (without alignments)
4.260 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BLOSUM62 Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-437-912-2
68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    193259 seqs, 20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/bckfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
         DB
    US-08-820-825-14
US-08-409-7317-14
US-08-409-7317-2
US-08-470-2988-2
US-08-470-2988-2
US-08-820-825-2
US-08-820-825-2
US-08-8468-5778-12
US-08-468-5778-12
US-08-468-5778-12
US-08-468-5778-12
US-08-468-5778-12
US-08-468-5778-12
US-08-476-008-67
US-08-33-485-67
US-08-83-485-67
US-08-647-481-2
US-08-647-481-2
US-08-647-481-2
US-08-647-481-2
US-08-648-2
US-08-648-2
US-08-63-2
US-08-633-2
US-08-633-2
US-08-633-2
US-08-633-2
US-08-633-2
US-08-633-820-7
US-08-633-820-7
US-08-633-820-7
US-08-338-5798-29
US-08-338-5798-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        193259
Sequence 14, Appl Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 1, Appli Sequence 1, Appli Sequence 12, Appli Sequence 12, Appli Sequence 12, Appli Sequence 67, Appl Sequence 67, Appli Sequence 67, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 3, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 2, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Sequence 29, Appli Se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Description
```

Š

DDDLEHQGGHV

Query Match Best Local Matches	RESULT 1  US-08-820-825-14  Sequence 14, Applicat Sequence 14, Applicat Sequence 14, Applicat Sequence 14, Applicat Sequence 14, Applicat Sequence 14, Applicat Sequence 14, Applicat Sequence 14, Applicat No. 5945309  GENERAL INFORMATION: APPLICANT: NI. JI APPLICANT: DILLON TITLE OF INVENTION INTELE OF INVENTION APPLICATIC APPLICATIC STATE: MD COUNTRY: GOCKVILLE STATE: HOA STREET: 9410 KE STATE: HOA COMPUTER READABLE MEDIUM TYPE: P1 COMPUTER: ISM P OPERATING SYSTEM SOFTWARE: PATEN CURRENT APPLICATION NUMB FILLING DATE: 19 CLASSIFICATION UND REFERENCE/DOCKET NAME: BROOKES, RESISTRATION FOR SEO SEQUENCE CHARACTER LENGTH: 106 and ITYPE: amino aci STRANDEDNESS: S TOPOLOGY: linea GUS-08-820-825-14	22222222222222222222222222222222222222
similarity 6; Conservat	IT 1 -820-825-14 -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14  -820-825-14	44444444444444460 
61.8%; 54.5%; ive 3	ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS A. ANDERS	200 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Score 42; DB Pred. No. 2.3; Mismatches	008 III UE S-F2 F2 F2 F2	US-08-612-521-2 US-08-943-583-6 US-08-943-583-1 US-07-929-206-4 US-08-313-185-44 US-08-459-499-4 US-08-87-898-19 US-08-272-796-19 US-08-272-255-14 PCT-US-5-08-55-14 US-08-895-590-11 US-08-895-590-11 US-08-937-185-3 US-08-313-185-3 US-08-313-185-4 US-08-459-499-13 US-08-459-499-13
B 2; Length 10 3; s 2; Indels	on #1.30	
. 6;		Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence
; Gaps	·	2, Appl 6, Appl 1, Appl 4, Appl 4, Appl 4, Appl 4, Appl 19, App 11, App 11, App 11, Appl 11, Appl 11, Appl 11, Appl 11, Appl 11, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 17, Appl 18, Appl 19, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 17, Appl 18, Appl 19, Appl 10, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 16, Appl 17, Appl 17, Appl 18, Appl 19, Appl 11, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 16, Appl 17, Appl 18, Appl 19, Appl 11, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 16, Appl 17, Appl 17, Appl 18, Appl 19, Appl 11, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 16, Appl 17, Appl 18, Appl 18, Appl 19, Appl 10, Appl 11, Appl 11, Appl 11, Appl 12, Appl 13, Appl 14, Appl 15, Appl 16, Appl 17, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18, Appl 18,
0		

DЬ

39

DKEIEHQGNHM 49

US-09-307-817-14

Sequence 14, Patent No. 6

4, Application US/09307817 6232291

```
밁
                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                         US-08-409-731A-2
                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                            Sequence 2, Application US/08409731A Patent No. 5658758
                                                                                                                             GENERAL INFORMATION:
                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (301) 309-8512
NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 106 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                           CORRESPONDENCE ADDRESS
                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                        TITLE OF INVENTION: CYTOSTATIN I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                             STRANDEDNESS: si
 STREET:
                                                                                                                                                                                                                                39 DKETEHQGNHM 49
                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: .US/09/307,817 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 9410 KEY CITY: ROCKVILLE
                ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                            2 DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BROOKES, ANDERS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                       106 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: HUMAN GENOME SCIENCES, INC. 9410 KEY WEST AVENUE
9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                     Gentz, Reiner
Rosen, Craig A.
                                                                                               Ni, Jian
Yu, Guo-Liang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DILLON, PATRICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NI, JIAN
YU, GUO-LIANG
GENTZ, REINER L.
                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (301)
                                                                                                                                                                                                                                                                                                                                                                              protein
                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CYTOSTATIN III
: 15
                                                                                                                                                                                                                                                                                                        61.8%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08/820,825
                                                                                                                                                                                                                                                                                                       Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PF222
                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                      DB 4;
                                                                                                                                                                                                                                                                                                                      Length 106;
                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                         0
```

```
RESULT 4
US-08-470-298B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-409-731A-2
           MEDIUM TYPE: Floppy disk
COMPUTER: LBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/470,298B
FILING DATE: 06-TUN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ALLAN A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF175D1
TELECOMMUNICATION INFORMATION:
TELEFAX: 301-309-8504
TELEFAX: 301-309-8512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/409,731A
FILING DATE: 24 MAR-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Benson, Robert H
REGISTRATION NUMBER: 30,446
REGISTRATION NUMBER: 30,446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08470298B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No. 5844081
GENERAL INFORMATION:
NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: NI, JIAN
APPLICANT: GENTZ, RE:
APPLICANT: YU, GUO-L:
APPLICANT: ROSEN, CRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 107 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 20850
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 301-309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                 COUNTRY: UP
ZIP: 20850
                                                                                                                                                                                                                                                                                                                                                                       STREET: 9410 KEY CITY: ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 DDDLEHQGGHV 12
| ::|||| |:
40 DKEIEHQGNHM 50
                                                                                                                                                                                                                                                                                                                                                      STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: HUMAN GENOME SCIENCES, INC STREET: 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                      ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YU, GUO-LIANG
ROSEN, CRAIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENTZ, REINER
                                                                                                                                                                                                                                                                                                                                    SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301-309-8512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CRAIG A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOSTATIN I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61.8%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PF175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

Gaps

```
RESULT 6
US-08-820-825-2
; Sequence 2, Application US/08820825
; Patent No. 5945309
                                                                                         밁
                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 5
US-09-023-073A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-470-298B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application Patent No. 5977309
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                    TELEFAX: 301-309-8439
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/023,073A FILING DATE: 13-FEB-1998 CLASSIFICATION: 424
                                                                                                                                                                                                                                      TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 301-610-5772
                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Wales, Michele M.
REGISTRATION NUMBER: P-43,975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: CYNUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ni, Jian
APPLICANT: Gentz, Reiner
APPLICANT: Yu, Guo-Liang
APPLICANT: Rosen, Craig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 107 amino acids
                                                                                                                                                                                                                                                                          LENGTH:
TYPE: a
                                                                                       40 DKEIEHQGNHM 50
                                                                                                                                                   Local Similarity
les 6; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: ROCKVILLE STATE: MARYLAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40 DKEIEHQGNHM 50
                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER:
                                                                                                                     2 DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20850
                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/09023073A
                                                                                                                                                                                                                                                                                      107 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rosen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craig A
                                                                                                                                                               61.8%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cytostatin I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61.8%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                PF175D2
                                                                                                                                                               Score 42; DB Pred. No. 2.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 42; DB 2; Pred. No. 2.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                   Mismatches
                                                                                                                                                                               DB 2;
                                                                                                                                                                               Length 107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 107;
                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                 0
                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-899-031-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: protein US-08-820-825-2
                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/08899031 Patent No. 6046027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Bandman, Olga
APPLICANT: Guegler, Karl J.
APPLICANT: Shah, Purvu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Ve:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/820,825
FILING DATE: 19-MAR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (301) 309-85. INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/899,031
FILING DATE: Herewith
                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: (301) 309-8504
                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: GENTZ, REINER L.
APPLICANT: DILLON, PATRICK
TITLE OF INVENTION: CYPOSTATIN III
NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: HUMAN RETINOID BINDING PROTEIN NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS
                                                                                                                                                                                     STREET: 3174 PO:
CITY: Palo Alto
STATE: CA
                                                                                                                                                   COUNTRY: UZIP: 94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40 DKEIEHQGNHM 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U
ZIP: 20850
                                                                                                                                                                                                                         ADDRESSEE: Incyte Pharmaceuticals, Inc. STREET: 3174 Porter Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity les 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: HUMAN GENOME SCIENCES, STREET: 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ¥
                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NI, JIAN
YU, GUO-LIANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1) 305-8512
309-8512
NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61.8%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 42; I
Pred. No. 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

CLASSIFICATION: 530 PRIOR APPLICATION NUMBER:

0

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
"hes 6; Conserv?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; CLONE: US-08-899-031-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 8
US-09-307-817-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                               TELEFAX: (301) 309-85: [NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: APPLICANT:
                SEQUENCE CHARACTERISTICS:
                                                                     ATTORNEY/AGENT INFORMATION:
NAME: BROOKES, ANDERS A.
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                            CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                     CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: GENTZ, REINER LA APPLICANT: DILLON, PATRICK TITLE OF INVENTION: CYTOST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 135 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: 415-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MMEUIX.
LIBRARY: 51...
                                                                                                                                                                                                                                                            OPERATING SYSTEM:
                                                         TELEPHONE:
                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                              COMPUTER:
                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40 DKEIEHQGNHM 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: HUMAN GENOME SCIENCES, INC STREET: 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                       20850
                                                                                                                                                                                                                                                                                                                                                                   ROCKVILLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/09307817
135 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          415-845-4166
                                                                                                                                                                                                                                          IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENTZ, REINER L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NI, JIAN
YU, GUO-LIANG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SYNORAT01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                         (301) 309-8504
                         1) 305-8512
, 309-8512
-- NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                     CYTOSTATIN III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61.8%;
54.5%;
                                                                                                                                                                                                                      US/09/307,817
                                                                                                                                                             08/820,825
                                                                                       PF222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PF-0349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Thehes 6; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: protein US-09-307-817-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-468-576B-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 12, Application US/08468576B Patent No. 5955345
                                                    TELEFAX: (914) 332-18
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                      APPLICATION NUMBER: US 07/441,703 FILING DATE: 04-DEC-1989 PRIOR APPLICATION DATA:
                                    SEQUENCE CHARACTERISTICS:
                                                                                                   REFERENCE/DOCKET NUMBER: MD TELECOMMUNICATION INFORMATION:
                                                                                                                                                                     APPLICATION NUMBER: US 07/312,543 FILING DATE: 17-FEB-1989 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 07/872,646
FILING DATE: 08-UUN-1992
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/715,181
FILING DATE: 14-JUN-1991
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/239,276
FILING DATE: 05-MAX-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: System SOFTWARE: WordPerfect CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM: MEDIUM TYPE: Diskette, 3.50 inch, 1.4 Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: PANCREATIC ISLET CELL ANTIGENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                   NAME: Kurt G. Briscoe
REGISTRATION NUMBER: 33,141
                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: OF CLASSIFICATION:
                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/468,576B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA
ZIP: 10591-5144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40 DKEIEHQGNHM 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
                ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tarrytown : New York
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Sprung Kramer Schaefer & Briscoe 660 White Plains Road
              604 amino acids
                                                                (914)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rabin, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Apple Macintosh
                                                                                      (914)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  06-JUN-1995
                                                                332-1844
                                                                                    332-1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     System 7.5
                                                                                                                      MDI 251.7-KGB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4; Length 135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
```

Query Match 52.9%; Best Local Similarity 66.7%; Matches 6; Conservative

Score 36; DB 2; Pred. No. 1.6e+02; 0; Mismatches 3

Length 604;

0

Gaps

ij

Q

DDLEHOGGH 11

```
US-08-468-577B-12 ; Sequence 12, Application US/08468577B
                                                                                     밁
                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                     RESULT
                                                                                                                                                                                                                                   US-08-468-579B-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-468-579B-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 12, Application US/08468579B Patent No. 5981700 GENERAL INFORMATION:
                                                                                                                                                                                Query Match
                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                TELEFAX: (914) 332-18 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 0: FILING DATE: 05-MAY-1994 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 530 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: |
FILING DATE: 14-JUN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 17-FEB-1989 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 14-JUN-1991 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                     351 DTFEHGGGH 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             351 DTFEHGGGH 359
                                                                                                                                                  Local Similarity
mes 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 33,141
REFERENCE/DOCKET NUMBER: MDI 251.5-KGB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 04-DEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US 07/872,646 FILING DATE: 08-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: Apple 1
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Tarrytown STATE: New York
                                                                                                                                                                                                                                                                                                                                                TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US 07/312,543 FILING DATE: 17-FEB-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                   3 DDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10591-5144
                                                                                                                                                                                                                                            mino acids amino acids amino acid amino acid
                                                                                                                                                                                                                                                                                                                                                                                                               Kurt G. Briscoe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Sprung Kramer Schaefer & Briscoe 660 White Plains Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rabin, Daniel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WordPerfec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                  (914) 332-1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-DEC-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Diskette, 3.50 inch, 1.4 Mb storage
                                                                                                                                                                                                                                                                                                                               332-1844
                                                                                                                                                                 52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PANCREATIC ISLET CELL ANTIGENS OBTAINED BY MOLECULAR CLONING 19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            System 7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 07/441,703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/715,181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             us 08/239,276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US/08/468,579B
                                                                                                                                                                 Score 36; DB 2;
Pred. No. 1.6e+02;
                                                                                                                                                  Mismatches
                                                                                                                                                                                Length 604;
                                                                                                                                                Indels
                                                                                                                                                0
                                                                                                                                                Gaps
                                                                                                                                                0;
```

```
US-08-476-008-67; Sequence 67, Appli; Patent No. 5627061
                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                           US-08-468-577B-12
                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                       Query Match Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Patent No. 6001804
GENERAL INFORMATION:
                                  GENERAL INFORMATION:
APPLICANT: Barry, Gerard F.
APPLICANT: Kishore, Ganesh M.
APPLICANT: Padgette, Stephen R.
APPLICANT: Stallings, William C.
APPLICANT: Stallings, William C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (914) 332-18 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: Systemer SOFTWARE: WordPerfect CURRENT APPLICATION DATA: APPLICATION NUMBER: US.
          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/715,181
FILING DATE: 14-UN-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: Diskette,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                        351 DTFEHGGGH 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: FILING DATE: 08-JU
                                                                                                                                                                                                                                                                                         Local Similarity
mes 6; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 06 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Tarrytown
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 08/239,276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: Apple Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 10591-5144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                          ω
                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                        DDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kurt G. Briscoe
                                                                                                                                         Application US/08476008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Sprung Kramer Schaefer & Briscoe 660 White Plains Road
                                                                                                                                                                                                                                                                                                                                                                                                                          604 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rabin, Daniel
                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (914) 332-1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          05-MAY-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           08-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               17-FEB-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-DEC-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            332-1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PANCREATIC ISLET CELL ANTIGENS OBTAINED BY MOLECULAR CLONING
Glyphosate Tolerant
5-Enolpyruvylshikimate-3-Phosphate Synthases
                                                                                                                                                                                                                                                                                                          52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              System 7.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US 07/312,543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US 07/441,703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US 07/872,646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/468,577B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33,141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3.50 inch, 1.4 Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MDI 251.8-KGB
                                                                                                                                                                                                                                                                                                          Score 36; DB 3;
Pred. No. 1.6e+02;
                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                        Length 604;
                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                         Gaps
```

0,

CORRESPONDENCE ADDRESS:

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
"hehes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                            US-08-306-063-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/476,008
FILING DATE: 07-JUN-1995
CLASSIFICATION NUMBER: US 08/306,063
FILING DATE: 13-SEP-1994
APPLICATION NUMBER: US 08/306,063
FILING DATE: 13-SEP-1994
APPLICATION NUMBER: US 07/749,611
FILING DATE: 28-ANG-1991
CLASSIFICATION: 435
PRIOR APPLICATION: 435
PRIOR APPLICATION NUMBER: US 07/749,611
FILING DATE: 28-ANG-1991
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/7576 537
                                                                                                                                                                                                                                                                                                                                                                  -08-500
Sequence 67, App
Sequence 67, App
56334
                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (314)537-6047
NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acids
TOPOLOGY: line

(OLECUTE TYPE: TYPE: AMINO ACID
    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                       TITLE OF INVENTION: 6lyphosate Tolerant
TITLE OF INVENTION: 5-Enolpyruvylshikimate-3-Phosphate Synthases
                                                                                                                                                                                                                                                             APPLICANT: Barry, Gerard F.
APPLICANT: Kishore, Ganesh M.
APPLICANT: Padgette, Stephen R.
APPLICANT: Stallings, William C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein -476-008-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 30,914
REFERENCE/DOCKET NUMBER: 38
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314)537-6099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 0: FILING DATE: 31-AUG-1990 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               383 DDGLEIQGG 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 7
                                                                                                                          CITY: St.
                                                                                                                                             STREET:
                                                                 COUNTRY: UZIP: 63198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Hoerner Jr., Dennis R. REGISTRATION NUMBER: 30,914
                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 DDDLEHQGG 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                       Missouri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Missouri
                                                                                                                                                                                                                                                                                                                                                                                         Application US/08306063
                                                                                                                                             E: Dennis R. Hoerner, Jr., Monsanto Co. 700 Chesterfield Village Parkway
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: Dennis R. Hoerner, Jr., Monsanto Co. BB4F
700 Chesterfield Village Parkway
                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                            Louis
E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Dennis R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50.0%;
77.8%;
                                                                                                                                                                                                            69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US 07/576,537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 34;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38-21(10660)A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .5e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

```
US-08-833-485-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-306-063-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (314)--. 67
INFORMATION FOR SEQ ID NO: 67
SEQUENCE CHARACTERISTICS:
LENGTH: 447 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 67, Application US/08833485 Patent No. 5804425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07,
FILING DATE: 31-AUG-1190
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM CC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/306,063
FILING DATE: 13-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Padgette, Stephen R.
APPLICANT: Stallings, William C.
TITLE OF INVENTION: Glyphosate Tolerant
TITLE OF INVENTION: 5-Enolpyruvylshikimate-3-Phosphate Synthases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Barry, Gerard F.
APPLICANT: Kishore, Ganesh M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 38
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314)537-6099
TELEFAX: (314)537-6047
                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            383 DDGLEIQGG 391
                                                                                                              APPLICATION NUMBER: US/08/833,485 FILING DATE: 07-APR-1997 CLASSIFICATION: 435
                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                  CITY: St. Louis
STATE: Missouri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US 07/749,611 FILING DATE: 28-AUG-1991 CLASSIFICATION: 435
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                            ZIP: 63198
                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Dennis R. Hoerner, Jr., Monsa
STREET: 700 Chesterfield Village Parkway
                                                                                                                                                                                                                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity les 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: F
SOFTWARE: Patentin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 DDDLEHQGG 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hoerner Jr., Dennis R. RATION NUMBER: 30,914
                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50.0%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PC-DOS/MS-DOS
In Release #1.0; Version #1.25
US 07/749,611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        us 07/576,537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/306,063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    67:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        38-21(10660)A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 34; I
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                       Monsanto Co. BB4F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2.5e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
```

0,

PRIOR APPLICATION NUMBER: US 07/576,537

FILING DATE: 28-AUG-1991 CLASSIFICATION: 435

ij

```
; TOPOLOGY: 15; MOLECULE TYPE: US-08-833-485-67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-647-484-2
                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UMBER: US 08/430,033
FILING DATE: 27-APR-1995
ATTORNEY/AGENT INFORMATION:
NAME: Gaylo, Paul J.
NAME: Gaylo, Paul J.
REGISTRATION NUMBER: 36,808
REFERENCE/DOCKET NUMBER: 36,808
REFERENCE/DOCKET NUMBER: 310006
TELECOMMUNICATION INFORMATION:
TELEPHONE: (317) 276-0756
TELEPHONE: (317) 276-0756
INFORMATION FOR SEQ ID NO: 2:
CONCIDENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 07/576,
APPLICATION NUMBER: US 07/576,
FILING DATE: 31-AUG-1990
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: HOEZNET JT., Dennis R.
REGISTRATION NUMBER: 30,914
REFERENCE/DOCKET NUMBER: 38-21
TELECOMMUNICATION: TECHPHONE: (314)737-6099
TELEPHONE: (314)737-6047
INFORMATION FOR SEQ ID NO: 67:
SEQUENCE CHARACTERISTICS:
LENGTH: 447 amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/08647484 Patent No. 5618677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Ni, Binhui
APPLICANT: Paul, Stev
                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DDS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/647,484
FILING DATE: 14-MAY-1996
                    SEQUENCE CHARACTERISTICS:
LENGTH: 560 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: HUMAN BRAIN SODIUM DEPENDENT INORGANIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            383 DDGLEIQGG 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Indianapolis
STATE: Indiana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 46285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Eli Lilly and Company STREET: Lilly Corporate Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 DDDLEHQGG 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Steven M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 34; DB 1; Length 447; Pred. No. 2.5e+02; O; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    38-21(15117)A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
밁
                                                                                         US-08-647-484-2
                                     Query Match
Best Local Similarity 41.7
Matches 5; Conservative
91 VNNSTTHRGGHV 102
          1 LDDDLEHQGGHV 12 ::: |:|||
                                                50.0%;
41.7%;
                                        4; Mismatches
                                                 Score 34; E
Pred. No. 3.
                       DB 1; ... 3.2e+02; 3; Indels
                                                         Length 560;
                                        0
                                      Gaps
```

0;

Search completed: July 6, 2001, 09:10:20 Job time: 186 sec

, 

```
Fri Jul
```

Run on:	OM protein - protein search, using sw model	
0	pr	
n:	ot.	
	pi n	
	1	
	рr	
	ő	
Jul	eir	S
¥	Ñ	рy
g	eaı	Ti
N	:ch	yht.
001	`	Š
,	ısi	<u>U</u>
9	ng	Copyright (c) 1993 - 2000 Compugen Ltd.
: 17	₩	ü
ij	ă	
,	ode	00
Š	ű.	0
ear		င္ပ
Ch		Ď
C.		uge
лe		5
73		Ltd.
ω U		
9		
July 6, 2001, 09:17:57; Search time 73.59 Seconds		
ond		
(C)		

(without alignments)
12.421 Million cell updates/sec

GenCore version 4.5

Sequence:	Perfect score:	Title:
1 LDDDLEHQGGHV 12	68	US-09-437-912-2

Scoring table: BLOSUM62 Gapop 10.0 , Gapext 0.5

Searched: 219241 seqs, 76174552 residues

Total number of hits satisfying chosen parameters:

Minimum DB Maximum DB seq length: 0
seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

pir1:\*
pir2:\*
pir3:\*
pir4:\*

Database

PIR\_68:\*

score greater Pred. No. d. No. is the number of results predicted by chance to have a re greater than or equal to the score of the result being printed, is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score 68	Query Match	Length 644	51 B	ID KGHUH1	Description kininogen, HMM pre
ω	43		174	N	G83712	.cal p
4			683	N	S01433	$\sim$
<b>5</b> 1		•	3282	N	E82750	₽.
თ	42	•	3442	N	E82589	-
7	42	•	3455	N	B82519	_
œ	41		538	μ	O4CKA4	cytochrome P450
9	40.5		536	N	T27668	hypothetical pr
10	40		1025	N	S69790	fibronectin-bindin
11		•	1733	ν	S27939	tensin – chicken
12		•	1744	2	A54970	'n
13		٠	1792	2	A57075	4
14		٠	325	2	F83503	theti
15		57.4	534	Н	A48529	dria
16	39	57.4	571	_	DEECDL	
17		57.4	571	ุผ	E85850	hypothetical pr
18		٠	581	N,	G96811	unknown protein T1
19			651	Ν	A26581	beta-glucuronidas
20		57.4	744	ட	KIECG	GTP pyrophosphokin
21		•	744	2	E85929	hypothetical prote
22			81	N	C81931	
23		•	122	Ν	C53234	globulin-10 - maiz
24		•	236	N	T01662	=
25			407	Ν	T02258	1 - 1
26			489	N	T36100	le ATF
27		•	540	N	S21825	ike
28			573	J	Vecesa	
				٨	20004	groburin-is, Gr

two-component sens	G83932	ν	473	54.4	37	Ü
hypothetical prote	T42516	Ν	427	54.4	37	4.
probable oxidoredu	C85755	N	426	54.4	37	ັພ
probable oxidoredu	H64878	N	426	54.4	37	Ñ
hypothetical prote	T39712	N	420	54.4	37	Ë
probable mitochond	T39658	N	407	54.4	37	Ö
hypothetical prote	T06612	N	339	54.4	37	9
<ul> <li>hypothetical prote</li> </ul>	B83047	N	285	54.4	37	æ
unknown protein, 9	D96701	N	191	54.4	37	7
hypothetical prote	T51572	2	183	54.4	37	5
proteinase PfpI PA	E83601	N	179	54.4	37	ű
hypothetical prote	C83929	Ν	64	54.4	37	4
beta-fructofuranos	A37803	N	511	55.1	37.5	ũ
hypothetical prote	T15348	2	5170	55.9	38	ລັ
fatty-acid synthas	T18201	N	2422	55.9	38	<u>~</u>
Na+/H+-exchanging	A48858	N	818	55.9	38	ö

## ALIGNMENTS

kininogen, HMW precursor (validated] - human
N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen; prokininogen
N;Contains: bradykinin (kallidin 1); HMW kininogen I; HMW kininogen II; low molecular
C;Species: Homo sapiens (man)
C;Date: 28-May-1986 #sequence\_revision 28-May-1986 #text\_change 08-Dec-2000
C;Accession: A01279; A25276; S32422; A91153; A24871; A27899; A27699; A31905; A34030;
R;Ohkubo, II; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M.
Biochemistry 23, 5691-5697, 1984
A;Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide
A;Reference number: A90490; MUID:85122621

A; Molecule type: mRNA

A; Residues: 1-389 <OHK>

A;Cross-references: GB:K02566; NID:g177889
R;Takagaki, Y.; Kitamura, N.; Nakanishi, S.
J. Biol. Chem. 260, 8601-8609, 1985
A;Title: Cloning and sequence analysis of cDNAs
A;Reference number: A92544; MUID:85234582
A;Accession: A25276 for human high molecular weight and

A; Molecule type: mRNA A; Residues: 1-592, 'I', 594-644 <TAK>

A;Cross-references: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852 R;Auerswald, E.A.; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I. FEBS Lett. 321, 93-97, 1993 A;Title: Cloning, expression and characterization of human kininogen domain 3. A;Reference number: \$32422; MUID:93223854

A; Accession: S32422

A; Molecule type: mRNA A; Residues: 'ANSM', 253-377 < AUE>

A; Note: differences are due to known cloning artifacts R; Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl,

R;Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl, W. Eur. J. Blochem. 152, 307-314, 1985
A;Title: The amino acid sequence of the light chain of human high-molecular-mass kini A;Reference number: A91153; MUID:86030270
A;Accession: A91153

A;Molecule type: protein
A;Residues: 379-644 <LOT>
A;Residues: 379-644 <LOT>
A;Note: the bradykinin sequence preceding the light chain sequence was not determined A;Note: the bradykinin sequence preceding the light chain sequence was not determined R;Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W.

Eur. J. Bjochem. 154, 471-478, 1986

A;Title: Completion of the primary structure of human high-molecular-mass kininogen. A;Reference number: A24871; MUID:86108361
A;Accession: A24871

A;Molecule type: protein
A;Residues: 'Z'.20-380 <KELl>
R;Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W.
in Kinins IV, Greenbaum, L.M., and Margolius, H.S., ed., pp.85-99, Plenum Press,
A;Title: Amino acid sequence of the light chain of human high molecular mass kini
A;Reference number: A27899

```
A;Accession: 30000.
A;Molecule type: protein
A;Residues: 431-434 <STR>
A;Residues: 431-434 <STR>
A;Rtitamura, N.; Kitagawa, H.; Fukushima, D.; Takagaki, Y.; Miyata
J. Biol. Chem. 260, 8610-8617, 1985
J. Biol. Chem. 260, 8610-8617, 1985
A;Title: Structural organization of the human kininogen gene and
A;Title: Structural organization of the human kininogen gene and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 450-452,'X', 454,'X', 456 <LIT>
R; Straczek, J: Maachi, F: le Nguyen, D.;
FEBS Lett. 373, 207-211, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Lenarcic, B.; Krasovec, M.; Ritonja, A.; Olafsson, I.; Turk, V. FEBS Lett. 280, 211-215, 1991
A;Title: Inactivation of human cystatin C and kininogen by human cathepsin A;Reference number: S14303; MUID:91192133
A;Accession: S14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok, Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A;Title: Human cathepsin B and cysteine proteinase inhibitors A;Reference number: S02482; MUID:89076517
A;Accession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K. Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A;Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin
A;Reference number: A34030; MUID:88106632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Residues: 379-389, 'K',390-407, 'Q',409-644 <KEL2> R;Mindroiu, T.; Carretero, O.A.; Proud, D.; Walz, D.; Scicli, Biochem. Biophys. Res. Commun. 152, 519-526, 1988 A;Title: A new kinin moiety in human plasma kininogens. A;Reference number: A27699; MUID:88209021
                                                                                                                                                                                                         A; Reference number: S68059; A; Accession: S68059
                                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: protein
A;Residues: 264-359,'N', 361-375 <LEN2>
R;Little, S.S.; Johnson, D.A.
Biochem, J. 307, 341-346, 1995
A;Title: Human mast cell tryptase isoforms: separation A;Reference number: S55239; MUID:95251593
A;Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein
A; Residues: 380-389 <KAT1>
A; Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R:Maeda, H.; Matsumura, Y.; Kato, H.
J. Biol. Chem. 263, 16051-16054, 1988
A;Title: Purification and identification of [hydroxyprolyl(3)]bradykinin
A;Reference number: A31905; MUID:89034061
                                                                                                                                                                                                                                                                 A; Title: Purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: protein A; Residues: 380-389 < KAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Note: this peptide had Pro-383 modified A; Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: protein A; Residues: 381-389 < KAT2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Note: this peptide had Pro-383 modified to 4-hydroxyproline A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Reference number: A31905; A; Accession: A31905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein A; Residues: 379-389, 'K',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 380-389 < SAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: A34030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 380-389 <MIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              381-389 <MAE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                        from human plasma of 8059; MUID:96033974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           to 4-hydroxyproline
                                                                                                                                                                                                                                                            a tetrapeptide that potentiates
                                                                                                                                                                                                                                                                                                                 Becchi, M.; Heulin,
                                                                                                                           Y.; Miyata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        and examination
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (CPIs) in inflammatory
                                                                                                                                                                                                                                                                                                                 M.H.; Nabet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                released
                                                                      model for its evoluti
                                                                                                                           T.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     of substrate-spec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n.
                                                                                                                                                                                                                                                                 insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ascitic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human
                                                                                                                                                                                                                                                                                                                    Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         flu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             anc
```

```
C;Reywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d; 1-18/Domain: signal sequence #status experimental <SIG>F;1-18/Domain: signal sequence #status experimental <MAT1>F;19-644/Product: HMW kininogen I (prokininogen) #status experimental <MAT2>F;19-379,390-644/Product: HMW kininogen II #status experimental <MAT2>F;19-379/Domain: cystatin homology <CY1>F;14-253/Domain: cystatin homology <CY2>F;14-253/Domain: cystatin homology <CY3>F;264-375/Domain: cystatin homology <CY3>F;380-389/Product: lysyl-bradykinin (kallidin I) #status experimental <BDY>F;380-389/Product: lysyl-bradykinin (kallidin I) #status experimental <CH>F;380-389/Product: lysyl-bradykinin (kallidin I) #status experimental <CH>F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats F;431-434/Product: low molecular weight growth promoting factor #status experimental F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimental F;48/Binding site: carbohydrate (Asn) (covalent) #status absent F;169,205,294/Binding site: carbohydrate (Asn) (covalent) #status experimental F;389-90/Cleavage site: Met-Lys (kallikrein) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Asn) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Thr) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Ser) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Ser) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Ser) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Ser) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Ser) (covalent) #status experimental F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Ser) (covalent) #status experimental F;40
                                                                                                                                                                                                                                                                                                                                                                                    submitted to the EMBL Data Library, February 1999 A; Reference number: Z21559 A; Accession: T34850 A; Statue:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: Structural features of plasma kinins and kininogens. A;Reference number: A91455; MUID:90255622
A;Reference number: A91455; MUID:90255622
A;Contents: annotation; bradykinin
C;Comment: The HMW kininogen precursor and the LMW form are produced from the C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiat C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light characteristic Bradykinin, released from kininogen by kallikrein, is a potent vaso xyproline residue is present in the kininogen prior to the release of bradykin
C;Superfamily: 4-coumarate--CoA ligase; acetate--Co
C;Keywords: acid-thiol ligase
F;70-533/Domain: acetate--CoA ligase homology <ACL>
                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-541 <OLI>
A; Cross-references: EMBL; AL035478; PIDN: CAB36604.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probable acid--CoA ligase (EC 6.2.1.-) SC2G5.17 [similarity] -
C;Species: Streptomyces coelicolor
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change
                                                                                                                                                                           A; Experimental source: strain A3(2) C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Accession: T34850
R; Oliver, K.; Harri:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GDB:125256; OMIM:228960
A;Map position: 3927-3927
A;Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
C;Superfamily: kininogen; cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Pierce, J.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity nes 12; Conserv
                                                                                                                                     SCOEDB: SC2G5.17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LDDDLEHQGGHV 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          52-57, 1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 68; DE Pred. No. 0.0 0; Mismatches
                                                                                            acetate--CoA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
,. 0.00058;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        n by kallikrein, is a potent vasodilator prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J.; Barrell,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 #text_change 18-Aug-2000
                                                                                                                                                                                                                                                      GSPDB:GN00070;
                                                                                            ligase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B.G.; Rajandream,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                          SCOEDB: SC2G5.17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the same ge
itiation of
t chain is i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     coelicolo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

Best Local Similarity

64.7%; 66.7%;

Score Pred.

No .

DB 7.2;

2;

Length 541;

1

```
C;Accession: S01433; SJULLER, Sinclair, R.B.; Bibb, M.J. R;Sinclair, R.B.; Bibb, M.J. 1988 Mol. Gen. Genet. 213, 269-277, 1988 Mol. Gen. Genet. 213, 269-277 gene (c) of t
                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL:X12865; NID:g15458; PIDN:CAA31345.1; R;Hartley, N.M.; Murphy, G.O.; Bruton, C.J.; Chater, K.F. submitted to the EMBL Data Library, November 1993
A;Reference number: S38912
A;Accession: S38912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: phage phi-C31
C;Date: 30-Sep-1989 #sequence_revision 30-Sep-1989 #text_change 04-Mar-2000
C;Accession: S01433; S38912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Bacillus halodurans (-125)
C;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 31-Dec-2000
C;Accession: G83712
밁
                                 Q
                                                           Query Match
Best Local Similarity
""" | Conserv.
                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-683 < HAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: The repressor gene (c) of the Streptomyces temperate phage phi-c31: nucleotide A;Reference number: S01433; MUID:89039715
A;Accession: S01433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Gene: BH0503
C;Superfamily: Deinococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A83650; A; Accession: G83712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Takami, H.; Nakásone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Nucleic Acids Res. 28, 4317-4331, 2000
A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans
                                                                                                                                                                                                                                            C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:AP001508; GB:BA000004; NID:g10172890; PIDN:BAB04222.1; GSPDB:GN0(A;Experimental source: strain C-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ωy
                                                                                                                                                                                                                                                               A;Cross-references: EMBL:X76288; NID:g432610; PIDN:CAA53911.1; PID:g432611
                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-683 <SIN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          repressor protein C - phage phi-C31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-174 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein BH0503 [imported] - Bacillus halodurans (strain C-125)
                                                                                                                                                                            Superfamily: phage phi-C31 repressor protein C; Superfamily: phage phi-C31 repressor protein C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
474 DDDVERQGAH 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88
                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BH0503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 LDDDLEHQGGHV
                                     DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LNDWLHHRGGHI 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MDDDLEHRTGTV 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         . Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8,
                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63.2%;
58.3%;
                                                                                              63.2%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          radiodurans hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MUID: 20263314
                                                                         Score 43; DB Pred. No. 14; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 43; DB
Pred. No. 3.1;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
3.1;
                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein DR0763
                                                                                                                 Length 683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                   PID:g15459
                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F.; Hira
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                           J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; La chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marxino, C.L.; Marques, M.V.; Martins, A;Authors: Martins, E.M.F.; Matswah, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C., F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawa A;Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carr as-Neto, E.; Docena, C.; El-Dorry, H.; Facincani, A.P.; Ferreira, A.J.S. submitted to GenBank, June 2000
A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.;
밁
                                                                                                                                                                                                                                                                                                                    A; Contents: annotation
                                                                                                                                                                                                                                                                                                                                                   M.; Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.;
A;Reference number: A59328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Experimental source: strain 9a5c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Residues: 1-3282 <SIM>
A;Cross-references: GB:AE003928; GB:AE003849; NID:g9105798; PIDN:AAF83699.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Accession: E82750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Note: for a complete list of authors see reference number A59328 below
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: The genome sequence of the plant pathogen Xylella fastidiosa A;Reference number: A82515; MUID:20365717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;anonymous, The Xylella fastidiosa Nature 406, 151-157, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Xylella fastidiosa
C;Date: 18-Aug-2000 #sequence_revision
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hemagglutinin-like secreted protein XF0889 [imported] - Xylella fastidiosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E82750
                                                                                                                  Matches
                                                                                                                                           Query Match
Best Local
                                                       1 LDDDLEHQGGHV 12
                                                                                                               Similarity
5; Conser
                                                                                                                  Conservative
                                                                                                                                           Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Consortium
                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-Aug-2000 #text_change 20-Aug-2000
                                                                                                         .2e+02;
0;
                                                                                                                                                                      DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of the
                                                                                                                                                                   Length 3282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Organization
                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for Nucleotide
                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                               Vettore,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M.C.; Fr
E.E.; La
                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GSPDB:GN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nga, R.
Carrer
```

472 LENDIDNRGGHI 483

hemagglutinin-like secreted protein XF2196 [imported] - Xylella fastidiosa (strain C;Species: Xylella fastidiosa C;Date: 18-Aug-2000 \*sequence\_revision 20-Aug-2000 \*text\_change 20-Aug-2000 C;Accession: E82589  $R; anonymous, \ \mbox{The Xylella fastidiosa Consortium of the Organization for Nucleotide Nature 406, 151-157, 2000$ 

A;Title: The genome sequence of the plant pathogen Xylella fastidiosa. A;Reference number: A82515; MUID:20365717 A;Note: for a complete list of authors see reference number A59328 below A;Accession: E82589 A;Status: preliminary

A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Fr J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajina, J.P.; Krieger, J.E.; Kuramae, E.E.; La chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marlino, C.L.; Marques, M.V.; Martins, A;Authors: Martins, E.M.F.; Matsukuma, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawa A;Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silva, A.M.; Silva, A.M.; Silva, A.C.R.; da Silva, M.A.; Verjovski-Almeida, S.; Vettore, A.L. A; Experimental source: strain 9a5c
R; Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.
Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer
as-Neto, E.; Docena, C.; El-Dorry, H.; Facincani, A.P.; Ferreira, A.J.S.
submitted to GenBank, June 2000
A; Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Fr A; Molecule type: DNA A; Residues: 1-3442 <SIM> A; Cross-references: GB:AE004032; GB:AE003849; NID:g9107324; PIDN:AAF84995.1; GSPDB:GN

```
N;Alternate names: cytochrome P450-cm2
N;Contains: oxidoreductase (EC 1.-.-)
C;Species: Candida maltosa
C;Date: 31-Mar-1992 #sequence_revision 31-Mar-1992 #text_change 03-Mar-2000
C;Accession: S08668; A56578; S65523
R;Schunck, W.H.; Gross, B.; Mueller, H.G.
                                                                                        A; Reference number: S08667
A; Accession: S08668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           submitted to GenBank, June 2000

A; Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.P.; Krieger, J.E.; Kuramae, E.E.; Laig J.D.; Jungueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; Laig Chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins, A; Authors: Martins, E.M.F.; Matsukuma, A, Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.Y., F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, D., Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawasa A; Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silvai, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silvai, R.G.; Santelli, R.V.; Sawasa M.; Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; A; Reference number: A59328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: DNA
A;Residues: 1-3455 <SIN>
A;Residues: 1-3455 <SIN>
A;Cross-references: GB:AE004082; GB:AE003849; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; GB:AE04082; NID:g9108003; PIDN:AAF85560.1; GSPDB:GN001
A;Cross-references: GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE04082; GB:AE0
                                                                                                                                                                                      submitted to the EMBL Data Library, February 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Thes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: The genome sequence of the plant pathogen Xylella fastidiosa. A;Reference number: A82515; MUID:20365717
A;Note: for a complete list of authors see reference number A59328 bel A;Accession: B82519
A;Status: preliminary
         A;Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cytochrome P450 52A4 - yeast (Candida maltosa)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; anonymous, The Xyle Nature 406, 151-157,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: A59
A; Contents: annotation
C; Genetics:
A; Gene: XF2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Contents: annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000 C;Accession: B82519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hemagglutinin-like secreted protein XF2775 [imported] – Xylella fastidiosa (strain
C;Species: Xylella fastidiosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          472 LENDIDNRGGHI 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           472 LENDIDNRGGHI 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
         <SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Xylella fastidiosa Consortium of the Organization for Nucleotide Seque
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61.8%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      see reference number A59328 below
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3455;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 3442;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Laig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9a5c
                                                                                                                                  RESULT
S69790
fibronectin-binding protein II precursor -
C;Species: Streptococcus pyogenes
C;Date: 14-Feb-1997 #sequence_revision 13-M
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QУ
```

10

occus pyogenes
#sequence\_revision 13-Mar-1997 #text\_change 15-Oct-1999

Streptococcus pyogenes

```
A;Gene: CYP52A4
C;Superfamily: Candida cytochrome P450 52A3; cytochrome P450 homology C;Superfamily: Candida cytochrome P450 52A3; cytochrome P450 homology C;Keywords: chromoprotein; electron transfer; heme; iron; metalloprotein; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfer; heme; electron transfe
                                                                                                                                                                                                                                                                                                                                                                                               A:Map position: 1
A:Introns: 56/3; 88/3; 203/1; 228/2; 383/1; 467/3
C:Superfamily: Caenorhabditis elegans hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein ZK1053.2 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 04-Mar-2000 C;Accession: T27668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Scheller U.; Zimmer, T.; Kaergel, E.; Schunck, W.H. Arch. Biochem. Biophys. 328, 245-254, 1996
A;Title: Characterization of the n-alkane and fatty acid A;Reference number: S65522; MUID:96213873
A;Accession: S65523
A;Molecule type: protein
A;Residues: 2-15 <SCW>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene: CESP: ZK1053.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-536 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      submitted to the EMBL Data Library, A; Reference number: Z20402 A; Accession: T27668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Kershaw,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;2-538/Product: cytochrome P450 52A4 *status experimental <MAT>
F;331-507/Domain: cytochrome P450 homology <P45>
F;485/Binding site: heme iron (Cys) (axial ligand) *status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Residues:
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;MoLecule type: mRNA
A;Residues: 1-255,'D',257-538 <SC2>
A;Residues: 1-255,'D',257-538 <SC2>
A;Note: sequence inconsistent with nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:64322, NCBIP:64324)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:X51932; NID:g2609; PIDN:CAA36198.1; PID:g2610
A;Experimental source: strain EH15D
R;Schunck, W.H.; Vogel, F.; Gross, B.; Kargel, E.; Mauersberger, S.; Kopke, K.; Gengn
Eur. J. Cell Biol. 55, 336-345, 1991
A;Title: Comparison of two cytochromes P-450 from Candida maltosa: primary structures
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          endoplasmic reticulum.
A; Reference number: A56578; MUID:92037671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: EMBL:Z82084;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule
                                                                                                                                                                                                                                Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best
511 LDDDVDHKPRHGGYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
nes 8; Conserv
                                                                                        1 LDDDLEHQ---GGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 DDDLEHQGGHV 12
                                                                                                                                                                                 Similarity
8; Conserv
                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone
                                                                                                                                                                                                                       59.6%;
53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60.3%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              084; PIDN:CAB04976.1; GSPDB:GN00019; CESP:ZK1053.2
ZK1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                            Score 40.5;
Pred. No. 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          November 1996
                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                heme; iron; metalloprotein;
                                                                                                                                                                                                                                                                          DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۳.
                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                 <u>,,</u>
                                                                                                                                                                                                                                                                                                                                                                                                             protein ZK1053.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hydroxylating cytochrome
                                                                                                                                                                                 w
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     monooxygena
                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
δõ
                                                                                                                                                                                                                                                                                                  A;Molecule type: mRNA
A;Residues: 1-1733 CCHE>
A;Cross-references: EMBL:M74165; NID:g212751; PID:g212752
A;Cross-references: EMBL:M74165; NID:g212751; PID:g212752
R;Weigt, C.; Gaertner, A.; Wegner, A.; Korte, H.; Meyer, H.E.
J. MOl. Biol. 227, 593-595, 1992
A;Title: Occurrence of an actin-inserting domain in tensin.
A;Reference number: S28973; MUID:93021103
A;Accession: S28973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F:1-34/Domain: signal sequence *status predicted <SIG>
F:35-1025/Product: fibronectin-binding protein II *status predicted
F:848-868/Region: fibronectin binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Kreikemeyer, B.
submitted to the EMBL Data Library, December 1994
A;Reference number: $72666
A;Accession: $72666
В
                                                                                                                                                                                                          A; Molecule type: protein
A; Residues: 862-871, 'X', 877-1212
C; Superfamily: SH2 homology
F; 1461-1570/Domain: SH2 homology <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Chen, L.B. submitted to the EMBL Data Library, August 1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Gallus gallus (chicken)
C;Date: 17-Apr-1993 #sequence_revision 17-Apr-1993 #text_change 12-Feb-1999
C;Accession: S27939; S28973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-19,'T',21-145,'T',147-1025 <KRW>
A; Cross-references: EMBL: X83303; NID:g1070387;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues: 1-1025 <KRE>
A;Cross-references: EMBL:X83303; NID:g1070387; PIDN:CAA58282.1; PID:g1552714
A;Experimental source: strain A75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Kreikemeyer, B.; Talay, S.R.; Chhatwal, G.S.
Mol. Microbiol. 17, 137-145, 1995
A;Title: Characterization of a novel fibronectin-binding surface protein in group A stre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Accession: S69790; S72666
R;Kreikemeyer, B.; Talay, S
Mol. Microbiol. 17, 137-145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;999-1016/Domain: transmembrane #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;869-907/Region:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: sfbII
A; Start codon: TTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Reference number: S69790; MUID: 96020668
A; Accession: S69790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A; Accession: S27939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tensin - chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Keywords: fibronectin binding; membrane bound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Note: the authors translated the initiation codon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .848-868/Region: Libronectin binding
,869-940/Region: fibronectin binding
,908-946/Region: membrane anchor cleavage motif
,990-994/Region: membrane #status predicted
                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
568 LDDELPNQDGH 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      809 DEDLEISGGH 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 DDDLEHQGGH 11
|:||| |||
                                         1 LDDDLEHQGGH 11
                                                                                        Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                       SH2 homology <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58.8%;
70.0%;
                                                                                                         58.8%;
                                                                                      Score 40; DB
Pred. No. 1.3e
2; Mismatches
                                                                                        ν,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 40; DB:
Pred. No. 72;
1; Mismatches
                                                                              DB 2; Lc..
. 1.3e+02;
. ```` 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIDN:CAA58282.1; PID:g1552714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                  Length 1733;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AMIC
MMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTG for residue 1 as Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1025;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <MAT>
                                                                                      Gaps
                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
C;Species: Gallus gallus (chicken)
C;Date: 11-Nov-1994 #sequence_revision 11-Nov-1994 #text_change 21-Jul-2000
C;Accession: A54970; S38330; S21544
R;Lo, S.H.; An, Q; Bao, S; Wong, W.K.; Liu, Y.; Janmey, P.A.; Hartwig, J.H.; Chen, J.H. Chen, 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1994
A;Tibol. Chem. 269, 22310-22319, 1
hypothetical protein PA1130 [imported] - Pseudomonas aeruginosa (strain PAO1) C;Species: Pseudomonas aeruginosa C;Deceies: Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000 C;Accession: F83503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Gallus gallus (chicken)
C;Date: 05-Jan-1996 #sequence_revision
C;Accession: A57075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
A54970
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:L06662; NID:g212754; PIDN:AAA73949.1; PID:g212755
C;Superfamily: SH2 homology
F;1520-1629/Domain: SH2 homology <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Chuang, J.Z.; Lin, D.C.; Lin, S.
J. Cell Biol. 128, 1095-1109, 1995
A;Title: Molecular cloning, expression, and A;Reference number: A57075; MUID:95204530
A;Accession: A57075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:X66286; NID:g63802; PIDN:CAA46992.1; PID:g63803
C;Superfamily: SH2 homology
C;Keywords: cardiac muscle; heart
F;1472-1581/Domain: SH2 homology <SH2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M96625
R;van de Werken, R.; Gennari, M.; Tavella, S.;
Eur. J. Biochem. 217, 781-790, 1993
A;Title: Modulation of tensin and vimentin exprairitle: Modulation of tensin and vimentin expra;Reference number: S38330; MUID:94039118
A;Accession: S38330
                                                                                                                                                        F83503
                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-1792 <CHU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              tensin - chicken (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1469-1744 <VAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-1744 <LOA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary; nucleic acid sequence not shown; not compared with conceptual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tensin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local
                                                                                                                                                                                                                                                                                                             615 LDDELPNQDGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            567 LDDELPNQDGH 577
                                                                                                                                                                                                                                                                                                                                                          1 LDDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 LDDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cardiac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           chicken
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 40; DB 2; Len
Pred. No. 1.3e+02;
Pred. No. 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 40; DB 2; Le
Pred. No. 1.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-Jan-1996 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mapping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1792;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of the high affinity actin-cappin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P.; Molina,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chick
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    embryo developing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F.; Lin, S.; Cancedda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

```
mitochondrial processing peptidase (EC 3.4.24.64) 55K protein precursor - potato N;Alternate names: p-55; ubiquinol--cytochrome-c reductase (EC 1.10.2.2) core protein I C;Species: Solanum tuberosum (potato)
C;Date: 28-Mar-1994 #sequence_revision 14-Jul-1994 #text_change 31-Dec-2000
C;Accession: A48529
R;Emmermann, M; Braun, H.P; Arretz, M; Schmitz, U.K.
J. Biol. Chem. 268, 18936-18942, 1993
A;Title: Characterization of the bifunctional cytochrome c reductase-processing peptidas A;Reference number: A48529; MUID:93366812
A;Accession: A48529; MUID:93366812
A;Accession: A48529; MUID:93366812
A;Experimental source: var. Marfona, tuber
A;Note: sequence extracted from NCBI backbone (NCBIP:136740)
C;Superfamily: mitochondrial processing peptidase alpha chain
C;Keywords: hydrolase; metaalloproteinase; mitochondrial matrix; mitochondrion; oxidative
E;1-32/Domain: transit peptide (mitochondrion) #status predicted <TNP>
F;33-534/Product: mitochondrial processing peptidase 55K protein #status experimental 
Search completed: July 6, Job time: 644 sec
                                                                                                                            밁
                                                                                                                                                                    Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Thehes 7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Cross-references: GB:AE004543; GB:AE004091; NID:g9947047; PIDN:AAG04519.1; GSPDB:GN00:A;Experimental source: strain PAO1 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic pathorals, Reference number: A82950; MUID:20437337
A;Accession: F83503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, M.J.; Bradman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, K.; Lim, Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: PA1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-325 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                    Query Match
Best Local Similarity 41...
Conservative
                                                                                                                    |::::|: |||:
161 LEEEIENMGGHL 172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ||||||| |
| 17 || DDDLEHLG 24
                                                                                                                                                       1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 DDDLEHQG 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                              57.4%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57.4%;
87.5%;
                       2001, 09:17:58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 39; DB; Pred. No. 30; 0; Mismatches
                                                                                                                                                                                                                            6;
                                                                                                                                                                                                                       Score 39; DB 1; Length 534; Pred. No. 52; 6; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 325;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,:
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                       ..
                                                                                                                                                                                                                                                                                                                                   Score
   68
43
41
40
39
39
39
38
37
37
37
             Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-437-912-2
68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               July 6, 2001, 09:26:36; Search time 37.59 Seconds (without alignments)
10.936 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                       SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
   DB
         DLD_ECOLI
BGLR_HUMAN
RELA_ECOLI
GLB1_MAIZE
NAH1_PIG
SCRB_ZYMMO
ORDL_ECOLI
BGLR_MOUSE
BGLR_RAT
INVA_ZYMMO
TC1A_CAEBR
ETFA_SCHPO
ALKB_ARATH
KRE2_YEAST
BGLR_CANFA
BGLR_CANFA
KRE2_YEAST
BGLR_CANFA
YZ3_METJA
YZ13_METJA
                                                                                                                                                                                                                                                                                 KNG_HUMAN
RPC_BPPHC
CP5D_CANMA
TENS_CHICK
                                                                                                                                                                                                                                                               CBX4_HUMAN
                                                                                                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93435
         p35636 zymomonas m
p52744 homo sapien
p35072 caenorhabdi
P78790 schizosacch
Q9sa98 arabidopsis
p50201 agrobacteri
p27809 saccharomyc
O18835 canis famil
O97524 felis silve
Q60282 methanococc
p47994 staphylococ
p26231 mus musculu
p24372 halobacteri
p73204 synechocyst
p43011 haemophilus
p30634 caenorhabdi
p43283 zea mays (m
                                                                                                                                                                 P06760
P35636
                                                                                                                                                                                                                                                     Q04205
055187
000257
P06149
                                                                                                                                                                                                                                                                                           P01042 homo sapien
P08979 bacteriopha
P16141 candida mal
                                                                                                                                                                                                                P48762
                                                                                                                                                                                                                                                                                                                                Description
4 caenorhabdi
3 zea mays (m
1 drosophila
                                                                                                                                                                                                               6 homo sapien
5 escherichia
0 zea mays (m
2 sus scrofa
                                                                                                                                                                                    zymomonas m
6 escherichia
5 mus musculu
                                                                                                                                                                          rattus norv
                                                                                                                                                                                                                                                               homo sapien
                                                                                                                                                                                                                                                                                  gallus gall
                                                                                                                                                                                                                                                    escherichia
                                                                                                                                                                                                                                                                          mus musculu
```

45	44	43	42	41	40	39	38	37	36	35	34
34	34	34	34	34	34	34	34	3 5	35	35	35
50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	51.5	51.5	51.5	51.5
390	379	362	357	323	316	163	163	1612	906	643	528
Н	Н		۳	Н	۲.	٢	1	_	Н	Н	1
MEI1_HUMAN	PSI_SCHPO	COTH_BACSU	DHAS_STRMU	ARG2_SCHPO	PAAX_ECOLI	GVH2_HALN2	GVH2_HALN1	ATC4_YEAST	CTN1_HUMAN	NOSZ_ALCEU	BG1_ARATH
000470 homo sapien	2	-	P10539 streptococc		P76086 escherichia	P33961 halobacteri	Q9hht6 halobacteri		P35221 homo sapien	Q59105 alcaligenes	Q9se50 arabidopsis

## ALIGNMENTS

RART	R R R	R R R R	2 P Z	RT	RA :	R R R	2 2 3	RA	RX P	R.C.	R 자	RA	R R X	R RV	RL	RA C	R RA	RX	8 P	RN S	28	8	o G	DE	בי דם	DI S	PT AC	- 9	RESULT
DISULFIDE BONDS. Sueyoshi T., Miyata T., Kato H., Iwanaga S.; "Disulfide bonds in bovine HMW kininogens.";		SEQUENCE OF 381-389. MEDLINE=90255622; PubMed=4952632; Pierce J V.:	mass kininogen"; Eur. J. Biochem. 152:307-314(1985).	· · ·		(+) SEQUENCE OF 379-644. MEDLINE=88030270: PubMed=4054110:	its identity with low molecular weight kininogen."; Biochemistry 23:5691-5697(1984).	i K., Takasawa T., Shi uman cDNA for alpha 2-	SEQUENCE OF 1-401 FROM N.A. MEDLINE=85122621; PubMed=4441591;	J. Biol. Chem. 260:8610-8617(1985).	## 	11. / - tanapatama p. / - tanapana - 1. / 11. ] aca - 1.	. Takadaki V., Mivata T	GENE STRUCTURE	J. Biol. Chem. 260:8601-8609(1985).	ght and low molecular weight prekiningeens. Primary	Takagaki Y., Kitamura N., Nakanishi S.; "Cloning and sequence analysis of cDNAs for human high molecular	85234582; PubMed=2989293;	SEQUENCE FROM N.A. (ISOFORMS HMW AND LMW).	NCBI_10X1D-9000;	lia; Eutheria; Primates; Catarrhini mayTD=0606:	; Metazoa;		YKININ].	l. 40, Last annotations of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the contraction of the c	(Rel. 33, Last	of Created	KNG_HUMAN STANDARD; PRT; 644 AA.	ULT 1

Seikagaku

56:808-808(1984)

```
ROSILL,
Glycoprotell,
Bradykinin; Blood,
Alternative splicing.
Alternative 1 18
*TGNAL 19 644
19 380
389
                                                                                                                                                                                                                                                                                                     BL; M11522; AAB5

BL; M11523; AAB5

BL; M11524; AAB5

BL; M11526; AAB5

MBL; M11526; AAB5

MBL; M11526; AAB5

MBL; M11528; AAB

MBL; M11528; AAB

MBL; M11521; AA

EMBL; M11521; AA

EMBL; M11522; AA

EMBL; M11523; AA

EMBL; M11523; AA

EMBL; M11524; A

EMBL; M11525; A;

EMBL; M11526; A;

EMBL; M11526; A;

EMBL; M11526; A;

EMBL; M11526; A;

EMBL; M11526; A;

EMBL; M11526; A;

EMBL; M11526; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M11528; A;

EMBL; M1528; A;

EMBL
                                                                                                         Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Repeat; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL'
EMBL'
EMBL'
EMBL'
EMBL'
EMBL'
EMBL'
                                                                                                                                                                                                                                                                                       SWISS-2DPAGE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HMW-KININGEN PRAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININGEN POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMBIN-AND PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRITURESIS AND DIUGRESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NCCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION); (5) LMW-KININOGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMW-KININOGEN IS IN CONTRAST TO HMM-KININOGEN NOT INVOLVED IN BLOOD
                                                                                                                                                                                                                    InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE SPECIFICITY: PLASMA.

PTM: BRADYKININ IS RELEASED FROM KININOGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                        228960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through
een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                    KGHUL1.
B25276.
                                                                                                                                                                                                                                                                                                                S02482
                                                                                                                                                                                                                                                                                                                                                                                                                       AAB59551.1;
AAB59551.1;
AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                   A25276.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB59551.1;
AAB59551.1;
AAB59551.1;
                                                                                                                                                                                                                                                                                                                                                                                                     KGHUH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB59550.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB59550.
                                                                                                                                                                                                                                                                                            P01043;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB59550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA35497.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB59550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB59550.1;
                                                                                                                                                                                                                                                                                              HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                       JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOINED
        KININOGEN.
KININOGEN HEAVY CHAIN
BRADYKININ.
                                                                                                           Thiol protease inhibitor; Vasodilator; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HMW (SHOWN HERE) AND LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no restrictions ong as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ВΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     on
```

```
RESULT :
 밁
                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                Best Loc
Matches
                                                                                                                                                                                                                                         Query Match
      SEQUENCE from ....
STRAIN-C+-NORMICH;
MEDLINE=89039715; PubMed=3185504;
MEDLINE=89039715; PubMed=3185504;
Sinclair R.B., Bibb M.J.;
"The repressor gene (c) of the Streptomyces temperate phage phi c31:
"The repressor gene (c) of the Streptomyces temperate phage phi c31:
nucleotide sequence, analysis and functional cloning.";
"--" Gen. Genet. 213:269-277(1988).
                                                                                                                                                     RPC_BPPHC P08979;
                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                      VARSPLIC CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      REPEAT
MOD_RES
DISULFID
SEQUENCE FROM N.A. MEDLINE=94374705; PubMed=8088546; Hartley N.M., Murphy G.O., Bruton
                                                                                                                                01-NOV-1988 (Rel.
01-NOV-1988 (Rel.
01-NOV-1997 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
DOMAIN
                                                                                    Lambda phage group. NCBI_TaxID=10719;
                                                                                                    Viruses;
                                                                                                          Bacteriophage
                                                                                                                         REPRESSOR PROTEIN
                                                                                                                                               01-NOV-1988
                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                           VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                479
                                                                                                                                                                                                                           Local Similarity
nes 12; Conserv
                                                                                                                                                                                                        1 LDDDLEHQGGHV 12
                                                                                                                                                                           N
                                                                                                                                                                                                LDDDLEHQGGHV 490
                                                                                                  phage phi-C31.
dsDNA viruses,
                                                                                                                                                                                                                         100.0%;
nilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                               644
                                                                                                                                                                                                                                                                                                                                                                                      402
                                                                                                                                                                                                                                                                Ä
                                                                                                                                                            STANDARD;
                                                                                                                       09,
35,
                                                                                                                                                                                                                                                               644
593
71945
                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation updat
                                                                                                                                             Created)
                                                                                                   no RNA stage; Tailed phages; Siphoviridae;
                                                                                                                                                                                                                                                                MW;
Bruton C.J., Chater K.F.;
                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                  N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                    VSPPHTSMAPAODEERDSGKEQGHTR ->
PPKAGAEPASEREVS (IN ISOFORM LA
MISSING (IN ISOFORM LAW).
T -> I (IN REF. 1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CYSTATIN-LIKE 1.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PYRROLIDONE CARBOXYLIC ACID INTERCHAIN.
                                                                                                                                                            PRT;
                                                                                                                                                                                                                                  Pred. No. 0.00032;
                                                                                                                                                                                                                                         Score 68;
                                                                                                                                                                                                                                                              -> I (IN REF. 1).
3132B4CBAF8FBB7E CRC64;
                                                                                                                                                                                                                            Mismatches
                                                                                                                                                            683
                                                                                                                                                                                                                                                                                                                                                                 (GLCNAC.
(GLCNAC.
(GLCNAC.
                                                                                                                                update)
                                                                                                                                                            A
                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                        Length 644;
                                                                                                                                                                                                                                                                                     ISOFORM LMW)
                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                           SHLRSCEYKGR
                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                            Gaps
```

0

J)

```
CP5D_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 7
    CHARACTERIZATION.

MEDLINE=96311366; PubMed=8713123;

Ximmer T., Ohkuma M., Ohta A., Takagi M., Schunck W.H.;

Zimmer T., Ohkuma M., Ohta A., Takagi M., Schunck W.H.;

The CYP52 multigene family of Candida maltosa encodes diverse n-alkane-inducible cytochromes P450,";

Biochem. Biophys. Res. Commun. 224:784-789 (1996).

-I- FUNCTION: TOGETHER WITH AN NADPH CYTOCHROME P450 T CATALYZES THE TERMINAL HYDROXYLATION AS THE FIRST ASSIMILATION OF ALKANES AND FATTY ACIDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P16141;
01-APR-1990
01-APR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-APR-1990 (Rel. 14, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
CYTOCHROME P450 52A4 (EC 1.14.14.1) (CYPLITA4)
ALK3-A) (P450-CM2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Candida maltosa (Yeast).
Eukaryota; Fungi; Ascomycota;
Saccharomycetales; mitosporic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; X12865; CAA31345.1; -. EMBL; X76288; CAA53911.1; -. PIR; S01433; S01433.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gene
                                                                                                                                                                                                CHARACTERIZATION. MEDLINE-96311366;
                                                                                                                                                                                                                                                                                            molecular cloning and nucleotide
arranged genes.";
                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.

MEDLINE-91229697; PubMed-2039569;
MEDLINE-91229697; PubMed-2039569;
Ohkuma M., Tanimoto T., Yano K., Takag
"CYP52 (cytochrome P450alk) multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biochem. Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Schunck W.-H., Kaergel E., Gross B., Wiedmann B., Mauersberger S., Koepke K., Kiessling U., Strauss M., Gaestel M., Mueller H.-G.; "Molecular cloning and characterization of the primary structure of the alkane hydroxylating cytochrome P-450 from the yeast Candida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=89286595; PubMed=2735924;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-EH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYP52A4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CP5D_CANMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CANMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transcription regulation; Repressor; DNA-binding. SEQUENCE 683 AA; 74077 MW; B02379D204F37D1B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as lits content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                development.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Sequence of the of Streptomyces
                                                                                                                                                                                                                                                                       DNA Cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            474 DDDVERQGAH 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 DDDLEHQGGH 11
CATALYTIC POSITION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           147:29-40(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  h 63.2%;
Similarity 70.0%;
7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                     10:271-282(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   e essential early region of phi C31, a temperate phage spp. with unusual features in its lytic
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Commun. 161:843-850(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43; DB Pred. No. 6.7; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Saccharomycotina; (Saccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                      , Takagi M.;
Tahagi M.;
Tene family ir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             538 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
6.7;
                                                                                                                                                                                                                                                                                                                  in (
                                                                                                                                                   inck W.H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (ALKANE-INDUCIBLE
                                                                                                                                                                                                                                                                                                                                       Candida maltosa:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Saccharomycetes;
                                                                                                                                                                                                                                                                                                                    two
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Candida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                THE ENZYME
                  THE TERMINAL
                                                                                                                                                     functionally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a collaboration - MBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                   SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

밁 δÃ

and

mapping of the

high affinity

```
RESULT 4
TENS_CHICK
    A LD DD T T DD D T T DD D T T DD D T T DD D T T DD D T T DD T T DD D T T DD D T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T T DD T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                          Q04205; Q91007; Q92011;
01-NOV-1995 (Rel. 32, C)
01-NOV-1997 (Rel. 35, Li
01-NOV-1997 (Rel. 35, Li
Chuang J.Z., Lin D.C
                                                                                                                                                                                              MEDLINE=94350987; PubMed=8071358; Lo S.H., An Q., Bao S., Wong W.K.,
                                                                                                                                                                                                                                                                                                                                         Archosauria;
                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Archosauria; Aves;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002402; -. InterPro; IPR002974; -. Pfam; PF00067; p450; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restitute the European Bioinformatics Institute.
                    MEDLINE=95204530; PubMed=7896874; Chuang J.Z., Lin D.C., Lin S.;
                                                                                                                    *Molecular cloning of chick cardiac muscle sequence, expression, and characterization. J. Biol. Chem. 269:22310-22319(1994).
                                                                                                                                                                              Chen L.B.;
                                                                                                                                                                                                                                            TISSUE-Heart;
                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                   Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                          TENSIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TENS_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Electron
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PIR; S08668;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; X51932; CAA36198.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               modified and this statement is not removed.
                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INDUCTION: BY ALKANES.
SIMILARITY: BELONGS TO THE CYTOCHROME P450 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DDDLEKQEGYV 309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PR01239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PR00385; P450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PR00464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PS00086; CYTOCHROME_P450; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             58; O4CKA4.
IPR001128; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       485
485
39
235
235
239
442
514
514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      profit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46
485
39
235
300
442
442
514
514
61844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EP450II.
EP450IICYP52
                                                                                                                                                                                                                                                                                                                                            ; Chordata; Craniata; Vertebrata; Euteleostomi; Neognathae; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oxidoreductase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    institutions as long as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60.3%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                          Last
Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
M
                                                                                                                                                                                                                                                                                                                                                                                                                          sequence update)
annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HEME (BY SIMILARITY).
S -> P (IN REF. 2).
P -> N (IN REF. 2).
V -> T (IN REF. 2).
DD -> EA (IN REF. 2).
S -> L (IN REF. 2).
S -> L (IN REF. 2).
S -> D (IN REF. 2).
V -> D (IN REF. 2).
N -> D (IN REF. 2).
V -> L (IN REF. 2).
W -> L (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 41; DB
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                     Liu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Monooxygenase; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1744 AA
                                                                                                                                                                                                Υ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                There are no rest
                                                                                                                                        tensin.
                                                                                                                                                                                                   Janmey P.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                           Full-length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ЬY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                   Hartwig
                                                                                                                                                                                                                                                                                                                                                Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ņ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
SOLUTION OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE ST
  Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                  CONFLICT
                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M96625; AAA59053.1; --
EMBL; L06662; AAA73949.1; ALT_INIT.
EMBL; Z18529; CAA79215.1; ALT_INIT.
EMBL; M74165; AAA49087.1; --
EMBL; X66286; CAA46392.1; --
HSSP; P16277; 1BLJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Actin-binding;
DOMAIN 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM
                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                           CONFLICT
                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000980; Pfam; PF00017; SH2; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eur.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lin S., Cancedda R., Castagnola P.;
"Modulation of tensin and vimentin expression in chick embryo
developing cartilage and cultured differentiating chondrocytes.";
Eur. J. Biochem. 217:781-790(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-Embryonic chondrocytes, and Embryonic heart; MEDLINE-94039118; PubMed-8223621; van de Werken R., Gennari M., Tavella S., Bet P., M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chen L.B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 actin-capping J. Cell Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 1469-1744 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (XXX-1991) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND IN LINKING SIGNAL TRANSDUCTION PATHWAYS TO THE CYTOSKELET BINDS TO ACTINS AND PHOSPHORYLATED PROTEINS IN SRC-TRANSFORM CELLS. MAY BIND ACTIN WITH CAPPING AND BUNDLING PROPERTIES. SUBCCELLULAR LOCATION: LOCALIZES TO ADHERENS JUNCTIONS. TISSUE SPECIFICITY: HEART, GIZZARD, LUNG AND SKELETAL MUSCLE. PTM: TYROSINE-PHOSPHORYLATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: CONTAINS 1 TENSIN DOMAIN. SIMILARITY: CONTAINS 1 SH2 DOMAIN.
Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PS50001;
                                                                                                           49
61
88
404
452
508
522
566
666
875
909
1102
1102
1240
11480
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             domain of chicken cardiac tensin."; 128:1095-1109(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cytoskeleton;
                                                                                                           AA;
                                                                                                                               1113
1240
1480
1711
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SH2;
                                                                                                                                                                                                                                                                                                        49
61
88
404
452
509
522
                    58.8%;
63.6%;
                                                                                                           187214
                                                                                              SH2.

C -> R (IN REF. 2).

M -> T (IN REF. 2).

Q -> PR (IN REF. 3).

A -> T (IN REF. 2).

T -> A (IN REF. 2).

DV -> EL (IN REF. 2).

A -> P (IN REF. 2).

A -> P (IN REF. 2).

A -> T (IN REF. 2).

A -> T (IN REF. 2).

P -> A (IN REF. 2).

P -> A (IN REF. 2).

D -> E (IN REF. 2).

G -> A (IN REF. 2).

G -> A (IN REF. 2).

C -> D (IN REF. 2).

E -> D (IN REF. 2).

D -> E (IN REF. 2).
Score 40; DB
Pred. No. 62;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SH2 domain; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TENSIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   There are no restrictions ng as its content is in
                                          1,
                                          Length 1744;
                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Molina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a collaboration - MBL outstation
0,
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       on
0
```

```
RESULT 5
                                                                                                                                                                                                                                           밁
                                                                                                                                          Ş
                                                         RESULT 6
CBX4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                      Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CBX4_MOUSE STAN

O55187;

O1-OCT-2000 (Rel. 4

O1-OCT-2000 (Rel. 4

O1-OCT-2000 (Rel. 4
CBX4_HUMAN
000257;
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                          Repressor.
DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alkema M.J., Jacobs J., Voncken J.W., Jenkins N.A., Copeland N.G., Satijn D.P.E., Otte A.P., Berns A., van Lohulzen M.;
"MpC2, a new murine homolog of the Drosophila polycomb protein is a member of the mouse polycomb transcriptional repressor complex.";
J. Mol. Biol. 273:993-1003(1997).
J. MOL. BIOL. 273:993-1003(1997).
J. TATE OF GENES. MODIFIES CHROMATIN, RENDERING IT HERITABLY CHANGED
                                                                                                                                                                                                                                                                                                                                        MGD; MGI:1195985; Cbx4.
InterPro; IPRO00953; -.
Pfam; PF00385; chromo; 1.
PRINTS; PR00504; CHROMODOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U63387; AAB96874.1; HSSP; P23197; 1APO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. MEDLINE=98035734; PubMed=9367786;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                  170
                                                                                                                                                                                                                                                                                                Chromatin regulator; Nuclear protein;
                                                                                                                                                                                                                                                                                                               PROSITE; PS00598; CHROMO_1; 1. PROSITE; PS50013; CHROMO_2; 1.
                                                                                                                                                                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CBX4 OR MPC2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHROMOBOX PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SUBUNIT: COMPONENT OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10090,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      567
                                                                                                                                4 DLEHQGGH 11
||::||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: NUCLEAR.
SIMILARITY: CONTAINS 1 'CHROMO' DOMAIN.
                                                                                                                 DLQYQGGH 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IN ITS EXPRESSIBILITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LDDELPNQDGH 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LDDDLEHQGGH
                                                                                                                                                                      6; Conserv
                                                                                                                                                                                                                                          11
383
551 AA;
(Rel. 40, Created)
(Rel. 40, Last sequence update)
                                                                                                                                                                       Conservative
                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HOMOLOG
                                                                                                                                                                                                                                          69
395
60581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40, Created)
40, Last sequence update)
40, Last annotation updat
                                                                                                                                                                                     57.48;
75.08;
                                                                                                                                                                                                                                           MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          t annotation update)
4 (POLYCOMB 2 HOMOLOG) (PC2) (MPC2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE CHROMATIN-ASSOCIATED
                                                                                                                                                                      Score 39; DB Pred. No. 26; 2; Mismatches
                                                                                                                                                                                                                                          POLY-HIS.
30CEB09A82C58400 CRC64;
                                                                                                                                                                                                                                                                        CHROMO
                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                            558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   551 AA
                                                                                                                                                                               DB +
                                                                                                                                                                                                                                                                                                 Transcription regulation;
                                            ₿
                                                                                                                                                                                                  1;
                                                                                                                                                                       0
                                                                                                                                                                                                Length 551;
                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POLYCOMB COMPLEX
                                                                                                                                                                       0,
                                                                                                                                                                      Gaps
                                                                                                                                                                      0
```

J

```
RESULT
DLD_EC
                                                                                                                                                                                                                                                             Q
   PA PA PA
                                                                                                                         밁
                                                                                                                                                                                   Matches
                                                                                                                                                                                                                Query Match
                                                            _ECOLI
DLD_ECOLI
P06149;
01-JAN-1988
01-FEB-1994
                                                                                                                                                                                                                                                           DOMAIN
DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AF013956; AAB80718.1; -. EMBL; U94344; AAB62734.1; -. MIM; 603079; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. Then use by non-profit institutions as long of modified and this statement is not removed. entitles requires a license agreement (See lor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Satijn D.P.E., Gunster M.J., van der Vlag J., Alkema M.J., Saurin A.J., Freemont P.S., van
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=97342649; PubMed=9199346;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Satijn D.P.E., Olson D.J., van der Vlag J., I
Masselink H., Gunster M.J., Sewalt R.G.A.B.,
"Interference with the expression of a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota;
Mammalia;
                                                                                                                                                                                                                                                                                                                                      Chromatin
                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00385; chromo;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=97459707;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHROMOBOX
                                                                                                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                     PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P23197; 1AP0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo
                                                                                                                                                                                                                                                                                                                                                                                                                   nterPro;
                                                                                                                         168
                                                                                                                                                                                                   Local
                                                                                                                                                      4 DLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cell. Biol. 17:4105-4113(1997).

FUNCTION: INVOLVED IN MAINTAINING THE TRANSCRIPTIONALLY REPRESSIVE STATE OF GENES. MODIFIES CHROMATIN, RENDERING IT HERITABLY CHANGED IN ITS EXPRESSIBILITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: CONTAINS 1 'CHROMO' DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE SPECIFICITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBCELLULAR LOCATION: NUCLEAR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBUNIT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31 is associated with the polycomb group
transcriptional repressor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SWISS-PROT entry is copyright. It is produced through a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sapiens
                                                                                                                         DLQYQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  results in cellular
                                                                                                                                                                                                                                                                                                                                                     PR00504; CHROMODOMAIN.; PS00598; CHROMO_1; 1.; PS50013; CHROMO_2; 1.
                                                                                                                                                                                   Similarity
6; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OF 455-558
                                                                                                                                                                                                                                                                                                                                      regulator; Nuclear
                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000953; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Metazoa; Chordata; Craniata; Vertebrata; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN
                                                                                                                                                                                                                                                         16
383
499
558 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lts in cellular transformation and apoptosis."; Biol. 17:6076-6086(1997).
(Rel.
                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPONENT OF THE CHROMATIN-ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Human).
                                                                                                                                                                                                                                                             ĀĀ;
                                              STANDARD;
                                                                                                                                                                                                                                             69
398
508
61228 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=9315667;
 06,
28,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata;
                                                                                                                                                                                                 57.4%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last annotation update)
OLOG 4 (POLYCOMB 2 HOMOLOG) (PC2) (HPC2).
                Created)
 Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UBIQUITOUS
                                                                                                                                                                                                                                                             WW;
sequence
                                                                                                                                                                                 Score 39; DB Pred. No. 26; 2; Mismatches
                                                                                                                                                                                   2
                                                                                                                                                                                                                                                        POLY-HIS.
POLY-ALA.
; 7158526991D33463
                                                                                                                                                                                                                                                                                                                                     protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of Bioinformatics
                                                                                                                                                                                                                                                                                                           CHROMO
 update)
                                              570
                                                                                                                                                                                                                                                                                                                                     Transcription regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     There are no restrictions ong as its content is in
                                              A
                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Driel R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  van Driel R., C
human polycomb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hamer K.M.,
                                                                                                                                                                                                              Length 558
                                                                                                                                                                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Κ.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLYCOMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        complex and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Otte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Lambrechts C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Schul
te A.P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Otte
                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPLEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ψ.
                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           no
                                                                                                                                                                                   0
 TWREET REAL PROCESS CONTROL OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF
                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                             between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Science
                                                                                                                                                                                                                                                                                                                        THE
```

```
Dym O., Pratt E.A., Ho C., Eisenberg D.;
"The crystal structure of D-lactate dehydrogenase, a peripheral membrane respiratory enzyme.";
Proc. Natl. Acad. Sci. U.S.A. 97:9413-9418(2000).
-!- FUNCTION: FIRST COMPONENT OF THE MEMBRANE-BOUND D-LACTATE OXIDAS WHICH IS BELIEVED TO PLAY AN IMPORTANT ROLE IN THE ENERGIZATION THE ACTIVE TRANSPORT OF A VARIETY OF SUGARS AND AMINO ACIDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J., Mau B., Shao Y.;
Oxidoreductase; INIT_MET 0
                                  InterPro; IPR001575; Pfam; PF01565; FAD_b
                                                                                                                                                                                  EMBL; M10038; AAA23688.1;
EMBL; X01067; CAA25531.1;
EMBL; U00007; AAA60530.1;
                                                                                                                                                                                                                                                                   entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Campbell H.D., Rogers B.L., "Nucleotide sequence of the of Escherichia coli.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (Rel. 40, Last annotation update) D-LACTATE DEHYDROGENASE (EC 1.1.1.28).
                                                                                ECO2DBASE; H062.0; 6TH ECOGene; EG10231; dld.
                                                                                                                                                                                                                                                                                        modified and this statement entities requires a license
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Church G.M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Richterich P., Lakey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-K12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rule G.S., Pratt E.A., Chin C.C.Q., Wold "Overproduction and nucleotide sequence dehydrogenase of Escherichia coli.";
J. Bacteriol. 161:1059-1068(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A., AND SEQUENCE MEDLINE=85130784; PubMed=3882663;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. MEDLINE=85027231; PubMed=6386470;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=20402548; PubMed=10944213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The complete genome sequence of Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATALYTIC ACTIVITY: D-LACTATE + NAD(+) = COFACTOR: FAD.
                                                                                                                                                                                                                                                                                                                                                     European
                                                                                                                         A21893;
1F0X; 23
                                                                                                                                                                                                                                                                                                                             SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN European Bioinformatics Institute. There are no restr by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ENZYME REGULATION: REQUIRES PHOSPHOLIPID FOR SUBCELLULAR LOCATION: MEMBRANE BOUND LOCATED
                                                                                                                                                                   AE000302; AAC75194.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC MEMBRANE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           277:1453-1474(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (OCT-1993) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proteobacteria;
                                                                                                                         23-AUG-00
                                                                                                                                             DEECDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 внв2600;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Z.A
                     NAD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  144:367-373(1984).
                                                                                                        HT_{9}
                                       _binding_4; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Z.
Flavoprotein;
0
                                                                                                      EDITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gryan G.,
                                                                                                                                                                                    ALT_INIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gamma
                                                                                                                                                                                                                                                                                        agreement (See
                                                                                                                                                                                                                                                                                                              is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         respiratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        엵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             I.G.;
                     FAD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Jaehn L., Mintz L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wold F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1-17.
                     Membrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D-lactate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ., Ho C.;
the respiratory
                                                                                                                                                                                                                                                                                        http://www.isb-sib.
                                                                                                                                                                                                                                                                                                              Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PYRUVATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                          MAXIMAL ACTIVITY.
AT THE INNER FACE
                     3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dehydrogenase
                                                                                                                                                                                                                                                                                                              ЬĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D-LACTATE OXIDASE, THE ENERGIZATION OF
                                                                                                                                                                                                                                                                                                                                                     restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           + NADH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Robison
                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                           EMBL
                                                                                                                                                                                                                                                                                                                                                                             a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D-lactate
                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                            FACE
                                                                                                                                                                                                                                                                                           ch/announce/
                                                                                                                                                                                                                                                                                                                                                                           outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
                                                                                                                                                                                                                                                                                                                commerc:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gene
                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ę
                                                                                                                                                                                                                                                                                                                                    ņ
                                                                                                                                                                                                                                                                                                              way
cial
```

SS

SEQUENCE

570

₽,

64481 MW;

930B30CF4405B1A7 CRC64;

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BGLR_HUMAN
P08236;
01-AUG-1988
01-AUG-1988
01-OCT-2000
                                 Hum.
WARIANTS MPS-VII (MEDLINE=91090114;
                                            Wu B.M., Sly W.S.;
"Mutational studies in a patient with mucopolysaccharidosis type VII.";
                                                                                                                         Vervoort R., Lissens W., Liebaers I.;
"Molecular analysis of a patient with hydrops fetalis caused by beta-
glucuronidase deficiency, and evidence for additional pseudogenes.";
                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS). MEDLINE-96185449; PubMed-8599764;
                                                                                                                                                                                                                                                                             Tanaka J., Gasa S., Sakurada K., Miyazaki T., Kasai M., Makita A.; "Characterization of the subunits and sugar moiety of human placen and leukemic beta-glucuronidase."; and leukemic beta-glucuronidase."; Biol. Chem. Hoppe-Seyler 373:57-62(1992).
                                                                                                                                                                                                                                                                                                                                                                                      gene.
                                                                                                                                                                                                                                                                                                                                                                                          Shipley J.M., Miller R.D., Wu B.M., Kyle J.W., Sly W.S.; "Analysis of the 5' flanking region gene.":
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Grubb J.H., Sly W.S.,
"Cloning, sequencing,
glucuronidase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HUMAN
                                                                  MEDLINE=94154731;
Wu B.M., Sly W.S.;
                                                                                           VARIANTS
                                                                                                                                                                         VARIANT MPS-VII TRP-216
                                                                                                                                                                                                           targeting and
                                                                                                                                                                                                                                  Jain S., Drendel W.B., Chen Z.W., Mathews F.S.,
                                                                                                                                                                                                                                                                                                                              MEDLINE=92162201; PubMed=1311180;
                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oshima A., Kyle J.W., Miller R.D., Hoffmann J.W., Powell P.P., Grubb J.H., Sly W.S., Tropak M., Guise K.S., Gravel R.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. MEDLINE=87118233; PubMed=3468507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BETA-GLUCURONIDASE
                                                                                                                                                             MEDLINE=94154730; PubMed=8111412;
                                                                                                                                                                                                                        "Structure
                                                                                                                                                                                                                                                                                                                                          TISSUE=Placenta;
                                                                                                                                                                                                                                                                                                                                                                           Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-70 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=92009900; PubMed=1916806;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Proc. Natl. Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DDDVRHDGRH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 6; Conserv
MPS-VII CYS-382 AND VAL-619.
91090114; PubMed=1702266;
                                                                                           MPS-VII VAL-354
                                                                                                                                                                                                                                                                                                                                                                           10:1009-1018(1991).
                                                                                                                                                                                        of human beta-glucuronidase reveals candidate lysosomal and active-site motifs.";
t. Biol. 3:375-381(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2:446-457(1993).
                                                                                                                 2:443-445(1993).
                                                                                                                                                                                                                                                                                                                                                     23-32 AND 160-175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       221
                                                                              VAL-354 AND TRP-
PubMed=8111413;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sci. U.S.A. 84:685-689(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             57
60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>ب</u>
                                                                                          TRP-611.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39;
No.
                                                                                                                                                                                                                                                                                                                                                                                                of the human beta-glucuronidase
                                                                                                                                                                                                                                                                                                                                                                                                                       Grubb J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               651
                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DВ
27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                       hydrops
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for hu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 570;
                                                                                                                                                                                                                                                                                                                                                                                                                       Christensen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human
                                                        fetalis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                        form
                                                                                                                                                                                                                                                                                                       placental
                                                                                                                                                                                                                                                                                                                                                                                                                       S.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                        of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

γ

ω

DDLEHQGGHV:12

Best Loc Matches Query Match

Local

Similarity 6; Conser

Conservative

ω --

Mismatches

-

Indels

0

Gaps

0;

Pred Score

39; No.

DB

Length 651;

57.4%;

```
ACT_SITE CARBOHYD
                                                                                                                                                                                                                                                                             Pfam; PF00703; Glyco_hydro_2; 1.
PRINTS; PR00132; GLHYDRLASE2
PROSITE; PS00719; GLYCOSYL_HYDROL_F2_1; 1.
PROSITE; PS00608; GLYCOSYL_HYDROL_F2_2; 1.
Hydrolase; Glycosidase; Lysosome; Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tomatsu S., Fukuda S., Sukegawa K., Ikedo Y., Yamada S., Yamada Y., Sasaki T., Okamoto H., Kuwahara T., Yamaguchi S., Kiman T., Shintaku H., Isshiki G., Orii T., "Mucopolysaccharidosis type VII: characterization of mutations and molecular heterogeneity.";
SEQUENCE
                                                    VARIANT
                                                                                                                                                                                                                                                         SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M15182; AAA52561.1; EMBL; M65002; AAA52622.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shipley J.M., Sly W.S.;
                          VARIANT
                                                                                VARIANT
                                                                                                         VARIANT
                                                                                                                                   VARIANT
                                                                                                                                                            VARIANT
                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                        CARBOHYL
                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                       Mucopolysaccharidosis;
                                                                                                                                                                                                                                                                                                                                                                             PIR; A26581; A26581.
PDB; 1BHG; 17-SEP-97.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=93190983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT MPS-VII CYS-627
                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wutational analysis of a patient with mucopolysaccharidosis type
VI, and identification of pseudogenes.";
am. J. Hum. Genet. 52:517-526(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBUNIT: HOMOTETRAMER.
SUBCELLULAR LOCATION: LYSOSOMAL.
PTM: GLYCOSYLATED WITH 3 TO 4 N-LINKED OLIGOSACCHARIDE CHAINS.
DISEASE: DEFECTS IN GUSB ARE THE CAUSE OF MUCOPOLYSACCHARIDOSIS
TYPE VII (MPS-VII) (ALSO KNOWN AS SLY SYNDROME).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION: BETA-GLUCURONIDASE PLAYS AN IMPORTANT ROLE IN DEGRADATION OF DERMATAN AND KERATAN SULFATES.

CATALYTIC ACTIVITY: A BETA-D-GLUCURONOSIDE + H(2)O = AN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATALYTIC ACTIVITY: A BE ALCOHOL + D-GLUCURONATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: BELONGS TO FAMILY 2 OF GLYCOSYL HYDROLASES
                                                                                                                                                                                                                                                                                                                                                                 253220;
                                                                                                                                                                                                                                                                                                                                                  IPR001649; -
 651
                                                    619
                                                                               611
                                                                                                                                                                            23
451
173
272
420
631
                          627
                                                                                                         382
                                                                                                                                   354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Klinkenberg
AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=7680524;
                                                                                                                                                            22
651
451
173
272
420
631
216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            48:89-96(1991).
                          627
                                                    619
                                                                               611
                                                                                                         382
                                                                                                                                   354
 74715
                                                                                                                                                                                                                                                                      Disease mutation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .
X
 Œ,
                                                                                                                                                                                       N-LINKED
                                                                                                                               /FTId=VAR_003196.
A -> V (IN MPS-VII).
                                                                                                                                                          N-LINKED (GLCNAC. . R -> W (IN MPS-VII).
                                                                                                                                                                                                                  N-LINKED
                                                                                                                                                                                                                                             BETA-GLUCURONIDASE.
                                                 /FTId=VAR_003199.
A -> V (IN MPS-VII).
                                                                            /FTId=VAR_003198.
R -> W (IN MPS-VII).
                                                                                                                                                                                                                              PROTON
                                                                                                      /FTId=VAR_003197.
R -> C (IN MPS-VII).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ę,
/FTId=VAR_003201.
6BA7A19935C9ABBD CRC64;
                                        /FTId=VAR_003200
                           V
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         в.м.,
                        C (IN MPS-VII).
                                                                                                                                                                                                                              DONOR
                                                                                                                                                                                    (GLCNAC. .
                                                                                                                                                                                                              (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bachinsky D.R.,
                                                                                                                                                                                                                                                                       3D-structure
                                                                                                                                                                                                                                                                                 Signal;
                                                                                                                                                                                                     (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Grubb J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Υ.,
```

١,

Z)

RESULT 9
RELA\_ECOLI

RELA\_ECOLI P11585;

STANDARD;

PRT;

744 AA

Created)

밁

138

DTLEHEGGYL

```
밁
                       ş
                                                                                                                Query Match
Best Local
                                                  Matches
                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content use by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                              CONFLICT
SEQUENCE
                                                                                                                                               EcoGene; EG10835; rela.
InterPro; IPR002912; -.
Pfam; PF01842; ACT; 1.
                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1989 (Rel. 12,
01-OCT-1996 (Rel. 34,
30-MAY-2000 (Rel. 39,
GTP PYROPHOSPHOKINASE
                                                                                                                                                                                         PIR; A31996; KIECG.
                                                                                                                                                                                                 EMBL; J04039; AAA03237.1; -
EMBL; U29580; AAA69294.1; -
EMBL; AE000362; AAC75826.1;
                                                                                                                                                                                                                                                                  entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V Blattner F.R., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The nucleotide sequence Escherichia coli.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-89008481; PubMed-2844820;
Metzger S., Dror I.B., Aizenman E.,
Friesen J.D., Cashel M., Glaser G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bacteria; P
Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mau B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gregor J., Davis N.W., Kirkpatrick H.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=562;
                                                                                                                                      Fransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The complete genome sequence of Escherichia coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (PPGPP SYNTHETASE
 512
                                                            Local
                                                                                                                                                                                                                                                  tities requires a license agreement (See http://www.isb-sib.ch/announce/send an email to license@isb-sib.ch).
                         <u>س</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biol.
                                                                                                                                                                                                                                                                                                                                                  PATHWAY: FIRST STEP IN THE METABOLISM OF PPGPP. SIMILARITY: BELONGS TO THE RELA / SPOT FAMILY.
                                                                                                                                                                                                                                                                                                                                                                              5-'TRIPHOSPHATE.
                       LDDDLEHQG
PTHETEHTC
                                                                                                                                                                                                                J04039; AAA03237.1;
U29580; AAA69294.1;
                                                Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Proteobacteria;
                                                                                            2; Kinase.
307 307 307 307 307 307 307 307 30875 MW;
                                                                                                              744 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COLi
                                                  Conservative
520
                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             263:15699-15704(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IJ
                                                           57.4%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , Last sequence update)
), Last annotation update)
BE (EC 2.7.6.5) (ATP:GTP 3'-PYROPHOSPHOTRANSFERASE)
((P)PPGPP SYNTHETASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gamma subdivision; Enterobacteriaceae;
                                                ۲,
                                                             Score 39; DB Pred. No. 36;
                                                                                                                         Ŧ
                                                                                                             -> K (IN REF. 1).
FA269709F15E1F25 CRC64;
                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schreiber G., Toone M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Goeden M.A.,
                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of the relA gene
                                                1;
                                                                        Length 744;
                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                          FORM PPGPP.
3'-DIPHOSPHATE
                                                                                                                                                                                                                                                                                                restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rose D.J.,
                                                                                                                                                                                                                                                                                                                 a collaboration -
                                                0;
                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
                                              Gaps
                                                                                                                                                                                                                                                                                        no
                                                                                                                                                                                                                                                                                                    9
                                               0
```

```
SET TO THE REAL COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
GLB1_MAIZE
    338E
                                                                                                                                                                            8
                                                                                                                                                                                                                   Qy
                                                                                                          RESULT
                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 6
                                                                                      L_PIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLB1_MAIZE STAN
p15590;
01-APR-1990 (Rel. 1
01-AUG-1990 (Rel. 1
01-OCT-2000 (Rel. 4
GLOBULIN-1 S ALLELE
NAH1_PIG
P48762;
01-FEB-1996
01-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Biochem. Genet. 27:239-251(1989).

-i- PTM: THREE PROTEIN-PROCESSING STEPS OCCUR IN THE FORM
MATURE PROTEIN FROM THE PRANKRY TRANSLATION PRODUCT.
-i- POLYMORPHISM: THE THREE MOST COMMONLY OCCURRING GLB1
THE DESIGNATION L, I, AND S FOR LARGE, INTERMEDIATE,
PROTEINS, RESPECTIVELY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M24845; AAA33467.1;
HSSP; P50477; ICAW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    by the Glb1 gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=CV. INBRED LI
Belanger F.C., Kriz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; |
Magnoliophyta; Liliopsida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GLB1
                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                             PROPEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Seed storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00546; Seedstore_7s;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MaizeDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-89374022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Characterization of embryo globulins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kriz A.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 87-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Molecular characterization of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=4577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lant Physiol.
                                                                                                          11
                                                                                                                                                                            26
                                                                                                                                                                                                                     N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE 7S SEED STORAGE PROTEIN FAMILY.
                                                                                                                                                                                                                     DDDLEHQGGH 11
                                                                                                                                                                            DDNHHHHGGH
                                                                                                                                                                                                                                                              Similarity 60. 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Maize).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR001113;
                                                                                                                                                                                                                                                                                                                                                                         349
573 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INBRED LINE VA26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALLELE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91:636-643(1989)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                         18
86
573
349
65029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=2775172;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14, Created)
15, Last sequence update)
40, Last annotation updat
LE PRECURSOR (GLB1-S) (7S-
                                                                                                                                                                                                                                                                                  55.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Signal.
                                                                                                                                                                                                                                                                                                                                                                           WW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Embryophyta; Tracl; Poales; Poaceae;
                                                                                                                                                                                                                                                              Score 38; DB
Pred. No. 40;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                         N-LINKED (GLCNAC. . .) (P
525ED1D00A062976 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                               GLOBULIN-1 S ALLELE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             OR 21 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         major maize
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              update)
(7S-LIKE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     encoded
                                                                                                                                                                                                                                                                            DB
40;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tracheophyta; Spermatophyta; ceae; PACC clade; Panicoideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  as its content
                                                                                                                                                                                                                                                                                                       ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IN THE FORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bу
                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                       Length 573;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         embryo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     maize
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         globulin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ALLELES
                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SMALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         encoded
                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HAVE
                                                                                                                                                                                                                                                                0
```

(Rel. 33, Created)
(Rel. 33, Last sequence update)

STANDARD;

PRT;

818

A

```
DOMAIN
TRANSMEM
                                                                 DOMAIN
DOMAIN
                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M89631;
EMBL; S71135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92087905; PubMed=1661081;
Reilly R.F., Hildebrandt F., Biemesderfer D., Sardet C.,
Pouyssegur J., Aronson P.S., Slayman C.W., Igarashi P.;
Pouyssegur J., Aronson P.S., Slayman C.W., Igarashi P.;
Pouyssegur J., Aronson P.S., Slayman C.W., Igarashi P.;
Pouyssegur J., Aronson P.S., Slayman C.W., Igarashi P.;

"CDNA cloning and immunolocalization of a Na(+)-H+ exchanger
LLC-PK1 renal epithelial cells.";
Am. J. Physiol. 261:F1088-F1094(1991).
-!- FUNCTION: INVOLVED IN PH REGULATION TO ELIMINATE ACIDS GE
BY ACTIVE METABOLISM OR TO COUNTER ADVERSE ENVIRONMENTAL
CONDITIONS. MAJOR PROTON EXTRUDING SYSTEM DRIVEN BY THE I
SEDDIUM ION CHEMICAL GRADIENT. PLAYS AN IMPORTANT ROLE IN
                                           TRANSMEM
                                                                                                          DOMAIN
                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                     DOMAIN
                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR01084; NAHEXCHNGR. PRINTS; PR01085; NAHEXCHNGR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00999; Na_H_Exchanger;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000676;
InterPro; IPR001970;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sus scrofa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUL-1999 (Rel. 38, Last annotation update)
SODIUM/HYDROGEN EXCHANGER 1 (NA(+)/H(+) EXCHANGER 1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SLC9A1 OR NHE1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
PTM: PHOSPHORYLATED (POSSIBLE).
SIMILARITY: BELLONGS TO THE NA(+)/H(+) EXCHANGER FAMILY.
CAUTION: THE NUMBER, LOCALIZATION AND DENOMINATION OF HYD
DOMAINS IN THE NA(+)/H(+) EXCHANGERS VARY AMONG AUTHORS.
CAUTION: HYDROPHOBIC DOMAINS A, B AND L ARE NOT BELIEVED
TRANSMEMBRANAL, BUT ONLY MEMBRANE-ASSOCIATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSDUCTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Pig)
                                                                                                                                                                                                                                 N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAA31092.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB20633.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ycoprotein; Sodium transport; Transport; Phosphorylation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chordata; Craniata; Vertebrata; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                                                                                                              F (M5A) (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
G (M5B) (POTENTTAT)
                                                                                                                                            J (M8) (POTE CYTOPLASMIC
                                                                                                                                                                                                                             H (M6) (POTENTIAL).
CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                        G (M5B) (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
  CYTOPLASMIC
N-LINKED (GI
                                                                                                                                                                                      EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                              CYTOPLASMIC (POTEN
E (M5) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                        C (M3) (POTENTIAL).
EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC (POTENTIAL).
C (M3) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A (M1) HYDROPHOBIC CYTOPLASMIC (POTEN
                                                              EXTRACELLULAR (POTENTIAL)
                                                                                                     EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                             EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYTOPLASMIC (POTENTIAL)
                                           (M10) (POTENTIAL)
                                                                                                                                                                                                             (M7) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                       (M4) (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (M2) HYDROPHOBIC
                                                                                    HYDROPHOBIC
                                                                                                                                                                (POTENTIAL)
                                                                                                                             (POTENTIAL)
                                                                                                                                            (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EXCHANGER FAMILY.
DENOMINATION OF HYDROPHOBIC
.) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Euteleostomi;
Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (NHE-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Symport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IN SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INWARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ТО
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΒE
```

THE TENT OF THE TENT THE TENT THE TENT THE TENT TO BE THE TENT OF THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT THE TENT

```
RESULT
ORDI_EC
ID OF
AC P3
DT 01
DT 01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
SCRB_ZYMMO
                                                                                                        밁
                                                                                                                                 Ş
                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SQ
                                                                                                                                                             Matches
                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                            the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Cloning and sequencing of the sacA gene: characterization sucrase from Zymomonas mobilis.";

J. Bacteriol. 172:6727-6735(1990).

-i- CATALYTIC ACTIVITY: HYDROLYSIS OF TERMINAL NON-REDUCING FRUCTOFURANOSIDE RESIDUES IN BETA-D-FRUCTOFURANOSIDES.

-i- SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM .... STRAIN-ATCC 10988 / ZM1;
MEDLINE-91072217; PubMed-2254250;
MEDLINE-91072217; FubMed-2254250;
MEDLINE-91072217; PubMed-2254250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SCRB_ZYMMO
P22632;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-AUG-1991 (Rel.
01-AUG-1991 (Rel.
01-MAR-1992 (Rel.
                                                     ECOLI
                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                          Hydrolase; Glycosidase. ACT_SITE 43 43
                                                                                                                                                                                                                                                                                 InterPro; IPR001362; Pfam; PF00251; Glyco.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-AUG-1991 (Rel. 19, Last sequence update)
01-MAR-1992 (Rel. 21, Last annotation update)
SUCROSE-6-PHOSPHATE HYDROLASE (EC 3.2.1.26) (SUCRASE) (INVERTASE).
                                                                                                                                                                                                                                                                      PROSITE;
                                                                                                                                                                                                                                                                                                                       EMBL; M62718; AAA27701.1;
                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SACA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zymomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zymomonas
                                                                                                        185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 756 DDDEDHDGGLV 766
                                                                                                                                                                           Local
                                                                                                                                   w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: BELONGS TO FAMILY 32 OF GLYCOSYL HYDROLASES
                                                                                                                                 DDLEHQG-GHV 12
                                                                                                                                                                                                                                                                                                          A37803;
                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                        DDKKHQGIGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DDDLEHQGGHV 12
                                                                                                                                                           Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 63.7; Conservative
                                                                                                                                                                                                                                                                  00251; Glyco_hydro_32; 1.
PS00609; GLYCOSYL_HYDROL_F32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proteobacteria; alpha subdivision; Sphingomonas group
                                                                                                                                                                                                                              511 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    683
818 AA;
                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                           A37803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD
                                                                                                          195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            19,
19,
21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    683
90987 MW;
                                                                                                                                                                                                                              58397 MW;
                                                                                                                                                                        55.1%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 55.9%;
63.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 38;
Pred. No.
                                                                                                                                                                                                                                         BY SIMILARITY
                                                                                                                                                                           Pred. No. 43;
                                                                                                                                                                                      Score 37.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H -> Y (IN AAB20633).
9329F7D9A51D3DC9 CRC64;
                                                                                                                                                                                                                              8D20D476C8335FA0 CRC64;
                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OF TERMINAL NON-REDUCING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 511 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                       DB 1;
                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 818
                                                                                                                                                                                      Length
                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                       511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of.
                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

ORDL\_ECOLI P37906; 01-OCT-1994 01-OCT-1996

STANDARD;

426

8

(Rel. 30, Created)
(Rel. 34, Last sequence update)

01-NOV-1997 (Rel.

```
밁
                    ρy
                                                                                                                   Query Match
Best Local
                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Science [3]
                                                                                                                  Oxidoreductase; NA:
SEQUENCE 426 AA;
                                                                                                                                                       EMBL; U38543; AAC45300.1; -. EMBL; AE000228; AAC74383.1; -. EMBL; D90768; BAA14870.1; -. EMBL; M38433; AAA23429.1; -.
                                                                                                                                                                                                                       entities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                              the
                                                                                                                                                                                                                                                                                                        This
                                                                                                                                                                                                                                                                                                                                                         bacterial genome.";
Nucleic Acids Res. 22:4756-4767(1994).
                                                                                                                                                                                                                                                                                                                                                                                    Borodovsky M., Rudd K.E., Koonin E.V.; "Intrinsic and extrinsic approaches for detecting
                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Cloning an Escherichia coli osimilar to mammalian aldehyde Gene 99:15-23(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1-251 MEDLINE-91216440;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aiba H., Baba T., Fujita K., Hayashi K., Honjo A., Horiuchi T., Ikemoto K., Inada T., Isono K., Isono S., Itoh T., Kanai K., Kasai H. Kashimoto K., Kim S., Kimura S., Kitagawa M., Kitakawa M., Wakino K., Masuda S., Miki T., Mizobuchi K., Mori H., Motomura K., Nakamura Y., Mashimoto H., Nishio Y., Oshima T., Saito N., Sampei G., Seki Y., Tagami H., Takemoto K., Wada C., Yanamoto Y., Yano M.; Submitted (DEC-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N. STRAIN=K12 / MGJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Jovanovic Submitted
                                                                                                                                            EcoGene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-K12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-K12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Heim R., Strehler E.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mau B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=95075659;
                                                                                                                                                                                                                                                                                                                                                                                                                              IDENTIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROBABLE
174
                          Ç
                                                                                                                                                                                                                                                 European Bioinformatics Institute. There are no rest
by non-profit institutions as long as its content
ified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                              SIMILARITY: STRONG, TO H.INFLUENŽAE ORDL.
SIMILARITY: SOME, TO NAD-BINDING SITES OF DEHYDROGENASES
                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration en the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complete genome sequence of nce 277:1453-1474(1997).
                        LEHQGGHV 12
LDHSGGHI 181
                                                   Similarity
5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shao Y.;
                                                                                                                                            EG11822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  997 (Rel. 35, Last annotation update) OXIDOREDUCTASE ORDL (EC 1.-.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (OCT-1995) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / MG1655;
                                                   Conservative
                                                                                                                                NAD.
                                                                                                                                            ordL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM N.A.
PubMed=1840553;
                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=7984428;
                                                                                                                   47169
                                                                  62
4
                                                              . 58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the
                                                                                                                   ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gamma subdivision; Enterobacteriaceae;
                                                   ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL/GenBank/DDBJ
                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                               dehydrogenases.
                                                                                                                  44158FF418E9C254 CRC64;
                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Escherichia coli K-12.";
                                                            37;
                                                              DB
42;
                                                                                                                                                                                                                                                                         There are no restrictions
                                                                                                                                                                                                                                                Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein .";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                databases
                                                                          Length 426;
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                    genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 remarkably
                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                    for
                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kasai H.,
                                                                                                                                                                                                                                     .ch/announce/
                                                 Gaps
                                                                                                                                                                                                                                                               og
                                                                                                                                                                                                                                                                             on
                                                0;
```

EMBL; EMBL;

J02836; M63836; M28540;

J03047; AAA37696.1; J02836; AAA98623.1; M63836; AAA63309.1;

. . . .

an

```
RESULT 14
BGLR_MOUSE
                                                                                                                                                                                                        SEQUENCE FROM N.A.

MEDLINE-88085188; PubMed=2891607;

Gallagher P.M., D'Amore M.A., Lund S.D., Elliott R.W.,

Gallagher P.M., Ganschow R.E.;

"DNA sequence variation within the beta-glucuronidase among inbred strains of mice.";

Genomics 1:145-152(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EGLR_MOUSE STANDARD; PRT; 648 AA. P12265; Q61601; Q64473; Q64474; Q1-QCT-1989 (Rel. 12, Created) Q1-QCT-1989 (Rel. 12, Last sequence update) 15-DEC-1998 (Rel. 37, Last annotation update) BETA-GLUCURONIDASE PRECURSOR (EC 3.2.1.31).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gallagher P.M., D'Amore M.A., Lund S.D., Ganschow R.E.; "The complete nucleotide sequence of murine beta-glucur and its deduced polypeptide."; Genomics 2:215-219(1988).
                 use by non-profit institu modified and this statement entities requires a license
                                                                                     the
                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          murine beta-glucuronidase gene complex.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wawrzyniak C.J., Gallagher P.M., D'Amore M.A., Lund S.D., Rinchik E.M., Ganschow R.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=YBR, AND C3H/HEJ; TISSUE=Sperm; MEDLINE=89384641; PubMed=2779578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biochemistry 27:7131-7140(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=89062453; PubMed=3196706; D'Amore M.A., Gallagher P.M., Kor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GUSB OR GUS OR GUS-S.
                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mol. Cell. Biol. 9:4074-4078(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "DNA determinants of structural and regulatory variation within
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Complete sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=88284700;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                  SUBCELLULAR LOCATION: LYSOSOMAL.
SIMILARITY: BELONGS TO FAMILY 2 OF GLYCOSYL HYDROLASES.
                                                             European Bioinformatics Institute. The by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FROM N.A.
equires a license agreement (See email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=3397060;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and organization
                                         is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Korfhagen
zation of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Craniata; Vertebrata; Euteleosto Sciurognathi; Muridae; Murinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                         There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               T.R.,
                     . Usage by http://www.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         murine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   beta-glucuronidase mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ganschow R.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Carter J.E.
                                                                                                                                                                                                                                                      H(2)0 =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       beta-glucuronidase
                                         bу
                                                                                                                                                                                                                                                                                               ROLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Euteleostomi;

/ and for commercial
.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                               allele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene complex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pazik J.,
                                                                                                                                                                                                                                                                                               Z
                                                                                                                                                                                                                                                                                                                                                               0f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus.
                                                                                                                                                                                                                                                                                                                                                               the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                 on
                                                               on
```

CLEAVAGE NEAR IMATELY 3 KDA.

```
Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 5
                                                                                                                                                                                                                                                                                                           P06760;
Ol-JAN-1988 (Rel. 06, Created)
Ol-JAN-1988 (Rel. 06, Last sequence update)
Ol-JUL-1998 (Rel. 36, Last annotation update)
15-JUL-1998 (Rel. 36, Last annotation update)
POTTA - GLUCURONIDASE PRECURSOR (EC 3.2.1.31).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M28541; AAA63308
EMBL; M19279; AAA3769;
PIR; A28954; A28954
PIR; A29977; A29977.
HSSP; P08236; LBHG.
                                              Biochem.
                                                                                                                                                                                                                                                                                                                                                                                               _RAT
                                                       MEDLINE=8818378; pubMed=335537; powell p.p., Kyle J.W., Miller R.D., "Ratt liver beta-glucuronidase cDNA expression of a chimeric protein in Biochem. J. 250:547-555(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PROSITE; PS
Hydrolase;
SIGNAL
CHAIN
ACT_SITE
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Interpro; IPRUUID**;
Pfam; PF00703; Glyco_hydro_2; 1.
PRINTS; PR00132; GLHYDRLASE2.
PROSITE; PS00719; GLYCOSYL_HYDROL_F2_1; 1.
PROSITE; PS00608; GLYCOSYL_HYDROL_F2_2; 1.
PROSITE; PS00608; GLYCOSYL_HYDROL_F2_3; 1.
                                                                                                                                                                                                                  SEQUENCE FROM N.A.
TISSUE-Preputial gland;
MEDLINE-87016933; PubMed-3463967;
                                                                                                                                                                                                                                                                             Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
VARIANT
SEQUENCE
                                                                                                                             SEQUENCE OF 14-648
                                                                                                                                                              membranes
   <u>-</u>
                         +
                                                                                                                   TISSUE=Liver;
                                                                                                                                                  Proc. Natl.
                                                                                                                                                                                              Nishimura Y., Rosenf
Adesnik M., Andy R.;
                                                                                                                                                                                                                                                                                                                                                                                   BGLR_RAT
                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MGD; MGI:95874; Gus-s.
InterPro; IPR001649; -
                                                                                                                                                                        'Nucleotide sequence of rat preputial and in vitro insertion of its encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                           140 VEHEGGHL 147
                                                                                                                                                                                                                                                                                                                                                                                                          15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                5 LEHQGGHV 12
FUNCTION: BETA-GLICURONIDASE PLAYS AN IMPORTANT ROLE IN DEGRADATION OF DERWATAN AND KERATAN SULFATES. CATALYTIC ACTIVITY: A BETA-D-GLUCURONOSIDE + H(2)O = AN ALCOHOL + D-GLUCURONATE.
'SUBUNIT: HOMOTETRAMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
5; Conserv
                                                                                                                                                                                                          Y., Rosenfeld M.G., Kreibich G., Gubler U., Sabatini D.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Glycosidase;
23 648
2447 447
172 172
416 416
416 416
591 591
627 627
87 87
87 87
233 223
320 320
428 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               648
                                                                                                                                                  Acad.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAA63308.1;
AAA37697.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A.
                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                  Sci. U.S.A.
                                                                                                                             FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74239 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   54
62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  . .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-LINKED (GLCNAC...) (POTEN
N-LINKED (GLCNAC...) (POTEN
N-LINKED (GLCNAC...) (POTEN
T -> I (IN STRAIN C3H/HEJ).
I -> T (IN STRAINS YBR AND C3
V -> I (IN STRAINS YBR AND C3
V -> K (IN ALLELE GUS-SA).
F -> L (IN ALLELE GUS-SA).
F -> L (IN ALLELE GUS-SA).
G -> K (IN ALLELE GUS-SA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 37; DB Pred. No. 68; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROTON DONOR (BY SIMII N-LINKED (GLCNAC. . . )
                                                                                                                                                  83:7292-7296(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BETA-GLUCURONIDASE
                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                   cloning, s
                                                                                                                                                                                                                                                                                                                                                                                   648
                                                                                                                                                                        gland beta-glucuronidase cDNA polypeptide into microsomal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
68;
                                                                                                                                                                                                                                                                                                                                                                                   A
                                                          o J., w...
j, sequence r
ls.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Signal.
                                                                                          Grubb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                               comparisons
                                                                                          J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C3H/HEJ).
C3H/HEJ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                          Sly W
                                                                                                                                                                                                                                                                              Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                          ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
```

۲

Ŕ

```
Search completed:
Job time: 968 sec
                                                         밁
                                                                              Ω
                                                                                                                                                                Best Local Similarity
Matches 5; Conser
                                                                                                                  Query Match
Best Local
                                                                                                                                                                          CHAIN
ACT_SITE
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                               Pfam; PF00703; Glyco_hydro_2; 1.
PRINTS; PR00132; GLHYDRLASE2.
PROSITE; PS00719; GLYCOSYL_HYDROL_F2_1; 1.
PROSITE; PS00608; GLYCOSYL_HYDROL_F2_2; 1.
Hydrolase; Glycosidase; Lysosome; Glycoprotein;
SIGNAL 1 22
                                                                                                                                                                                                                                                                                                                                                                                                                                     modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                               PIR; A25047; A25047.
PIR; S00345; S00345.
HSSP; P08236; 1BHG.
                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; M13962; AAA41228.1; -. EMBL; Y00717; CAA68705.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                        140 VEHEGGHL
                                                                                5 LEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: LYSOSOMAL.

PTM: UNDERGOES A POSTTRANSCRIPTIONAL PROTEOLYTIC CLEAVAGE
C-TERMINAL END, WHICH REDUCES ITS SIZE BY APPROXIMATELY
SITE OF THIS CLEAVAGE HAS AS YET NOT BEEN DETERMINED.
SIMILARITY: BELONGS TO FAMILY 2 OF GLYCOSYL HYDROLASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a element the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                    IPR001649; -
                                                                                                                                                               23
447
172
416
591
627
14
21
487
648
                                                                                                       Conservative
           July
                                                         147
                                                                                12
                                                                                                                                                          648
447
172
172
416
591
627
14
21
487
74793.
           6
                                                                                                                 54.4%;
                                                                                                                                                                MW;
                                                                                                                                                            N-LINKED (GLCNAC. . .) (POT

N-LINKED (GLCNAC. . .) (POT

N-LINKED (GLCNAC. . .) (POT

N-LINKED (GLCNAC. . .) (POT

Q -> E (IN REF. 2).

V -> L (IN REF. 2).

M -> L (IN REF. 2).
             09:26:37
                                                                                                                Score 37;
Pred. No.
                                                                                                                                                                                                                                                         BETA-GLUCURONIDASE.
PROTON DONOR (BY SIMILARITY).
                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   (See http://www.isb-sib.ch/announce/
                                                                                                                   DB
68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        There are no restrictions ong as its content is in
                                                                                                                             1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                                                                                       0;
                                                                                                                             Length 648;
                                                                                                                                                                                                                                                                                          Signal.
                                                                                                       Indels
                                                                                                                                                                                                                      ) (POTENTIAL).
) (POTENTIAL).
) (POTENTIAL).
                                                                                                                                                                                                             (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                                                                                                                                                                                                                                                                                                                                                                                        is
a for
                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  collaboration
L outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ons on its in no way commercial
                                                                                                       Gaps
                                                                                                       0
```

Fri •

Ķ

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>Patabase</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Perfect score:
                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB DB
                                                                                    40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                SPTREMBL_16:*

1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_inverteb
6: sp_mammal:*
5: sp_inverteb
6: sp_macmal:*
7: sp_mhc:*
8: sp_organel:
9: sp_phage:*
10: sp_plane:*
11: sp_rodent:
12: sp_vertebr
13: sp_vertebr
14: sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length: 0
length: 2000000000
                                                                                                                                                                                                                                           Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hits satisfying chosen parameters:
  66.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-437-912-2
68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       425026 segs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                          sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_invertebrate: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_archea:*
                                                                                                                                                                                                                                                                                                                                                             sp_unclassified:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                   sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                     sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                 sp_plant:*
                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6, 2001, 09:25:52; Search time 118.42 Seconds (without alignments) 13.407 Million cell updates/sec
 236
239
239
541
1174
6483
6483
7188
3282
3442
3442
3442
1025
11025
11025
11025
11025
                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gapext 0.5
                                                                        10
                                                                                                                                                                                             10
                                                                     Q9PBE8
Q9P9U6
Q45994
Q9LWC2
                                               Q54507
P72532
                                                                                                                                                                    Q9Z5A6
Q9KFH6
                                                                                                                       Q9PEY9
                                                                                                                                  Q9XYY9
                                                                                                                                               Q9VXP2
                                                                                                                                                         Q9T215
                                                                                                                                                                                                                                             Ħ
                          084941
                                     Q9X3R6
                                                                                                                                                                                                       081250
081253
                                                                                                                                                                                             Q9SBF
                                                                                                                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425026
                     O81250 zea mays su
O81253 zea mays su
O93b51 zea mays su
O93b51 zea mays su
O93b56 streptomyce
O9k56 bacteriopha
O91215 bacteriopha
O91215 bacteriopha
O91229 drosophila
O91229 drosophila
O91229 drosophila
O91229 xylella fas
O91220 xylella fas
O45994 caenorhabdi
O91462 oryza sativ
O54597 streptococc
O93376 streptococc
O93376 streptococc
O93376 streptococc
O93376 streptococc
O94341 streptococc
Q9glm4
Q9hb10
                                                                                                                                                                                                                                           Description
           6 streptococc
1 streptococc
4 bos taurus
```

45	44	<b>4</b> 3	42	41	40	39	38	37	36	35	34	ω ω	32	31	30	29	28	27	26	25	24	23	22	21	20
38	38	38	38	38	38	38	38	38	38	38	38	38	38	8E.	38	38	38	38	38	38.5	39	39	39	39	39
Ġ	Ġ	Ģ	Ċ	Ġ	Ü	ŗ	Ġ	Š	5	Š	5	Ġ	5	5	Ġ	Ġ	Ġ	55.9	Š	ō	7.	7			
407	242	242	240	240	240	240	240	238	238	238	238	238	238	238	236	236	233	122	81	250	534	534	515	325	26
10	10	10	10	10	10	10	10	10	10	10	10	10	10	10				10	2	N					
Q41750	Q9SBE6	081251	Q9SBE7	Q9SBE9	Q9SBF0	081256	081252	Q9S6Z6	Q9SBE5	Q9SBE8	081258	081257	081255	081249	Q9SBF2	081254	Q9КJX2	Q03863	Q9JVF9	Q9FDL3	Q41445	Q9T2S9	P96182	Q914K5	Q9T2S3
Q41750	Q9sbe6	. 081251	Q9sbe7	Q9sbe9	Q9sbf0	081256	081252	Q9s6z6	Q9sbe5	Q9sbe8	081258	081257	081255	081249	Q9sbf2	081254	Q9kjx2	Q03863		Q9fd13	5		P96182		Q9t2s3
zea		zea		zea			zea							zea	zea	zea	nyxo	zea	neis	zymo	sol	sola	woli	pseu	solanum
	mays						mays			_						mays	тухососсия	zea mays	neisseria	zymomonas	solanum tub	solanum tub	wolinella	pseudomonas	ınum tub
(B)	us	us	su	su	su	su	ยน	ria	ia	SL	ria	Cia	su	su	su	us	J	î	3	3	dub	Ď	ß	ŝ	ţ,

# ALIGNMENTS

```
RESULT 2
081253
ID 081253
                                                                                                                                                                  RESULT
081250
                                                           B
                                                                                δÃ
                                                                                                                   Query Match
Best Local :
                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                      081250 PRELIMINARY;
081250;
01-NOV-1998 (TrEMBLrel. 08, C
01-NOV-1998 (TrEMBLrel. 08, L
01-OCT-2000 (TrEMBLrel. 15, L
GLOBULIN-1 (FRAGMENT).
                                                                                                                                                                                                                                     evidence from the Globulin-1 gene. Genetics 0.0-0(1998). EMBL; AF064213; AAC31456.1; -. HSSP; P50477; 1CAU.
Mendel; 31892; Zeama;1188;31892.
                                                                                                                                                                                                                                                                                                                                          Zea mays subsp. mays (maize), Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae; Andropogoneae; Zea.
NCBI_TaxID=4578;
                                                                                                                                                                PROSITE; PS00867; CPSASE_2; UNKNOWN_1.

NON_TER 236 236

SEQUENCE 236 AA; 27019 MW; 1F3D9BD
                                                                                                                                                                                                   InterPro; IPR000901; -.
InterPro; IPR0011113; -.
Pfam; PF00546; Seedstore_7s; 1.
                                                                                                                                                                                                                                                                                                Hilton H., Gaut B.S.; "Speciation in maize and its wild relatives:
                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                           26
                                                                       2 DDDLEHQGGH 11
||:| | |||
                                                         DDNLHHHGGH 35
                                                                                                       Similarity 7; Conserv
                                                                                                        Conservative
 PRELIMINARY;
                                                                                                                                                           236
27019 MW; 1F3D9BD92C032E05 CRC64;
                                                                                                                   66.2%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequ
                                                                                                        μ.
••
                                                                                                                   Score 45; I
Pred. No. 4
 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                       Mismatches
 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  236
                                                                                                                 DB
1.5;
 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                10;
                                                                                                        ?
                                                                                                                             Length 236;
                                                                                                        Indels
                                                                                                        0
                                                                                                        Gaps
                                                                                                        0
```

homo

sapien

```
Q
                                                                                                                                                                                                                                                                                                   ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCOMENS ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACCORDANT ACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
Q9SBF1
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO DE REPRESENTA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DE LA COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA DEL COMPANIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 7
                                                                                                                               Matches
                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                   NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                evidence from the Globulin-1
Genetics 0:0-0(1998).
EMBL; AF064218; AAC31461.1; -
HSSP; P50477; 1CAU.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. Hilton H., Gaut B.S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zea mays subsp. mays (maize)
Eukaryota; Viridiplantae; Em
Magnoliophyta; Liliopsida; Pc
Andropogoneae; Zea.
NCBI_TaxID=4578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-2000 (TremBLrel. 01-OCT-2000 (TremBLrel. GLOBULIN-1 (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9SBF1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hilton H., Gaut B.S.;
"Speciation and domestication in maize evidence from the Globulin-1 gene.";
Genetics 0:0-0(1998).
GEMBL; AF064216; AAC31459.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea mays subsp. mays (maize).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade; Panicoideae;
Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00546; Seedstore_7s; 1.
PROSITE; PS00867; CPSASE_2; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9SBF1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR001113; -...
Pfam; PF00546; Seedstore_7s; 1.
PROSITE; PS00867; CPSASE_2; UNKNOWN_1.
NON_TER 239 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1998 (TrEMBLrel. 01-NOV-1998 (TrEMBLrel. 01-OCT-2000 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GLOBULIN-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR000901; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Speciation and domestication in maize and vidence from the Globulin-1 gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=4578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nterPro; IPR000901;
26
                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
DDNLHHHGGH
                                                          DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DDNLHHHGGH 35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P50477; 1CAU.
1; 31895; Zeam
                                                                                                                           7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                               IPR001113; -
                                                                                                                                                                                                                                                                                                   239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (FRAGMENT).
                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                         39
                                                                                                                                                                                                                                                                                                   AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zeama;1188;31895
35
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239
27384 MW;
                                                                                                                                                                                                                                                                                                   27499
                                                                                                                                                                 66.2%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13,
15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08, Created)
08, Last sequence update)
15, Last annotation update)
                                                                                                                                                                                                                                                                                                   Μ¥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Embryophyta; Track Poales; Poaceae;
                                                                                                                           ; Score 45; DB;
; Pred. No. 4.5;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ب
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                147C4F61F65307FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               628924A8D7BA7773 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tracheophyta; Spermatophyta; ceae; PACC clade; Panicoideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB
1.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   its wild relatives:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              wild relatives:
                                                                                                                                                                                         Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
RESULT
Q9Z5A6
ID Q9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 8
STRAIN=C-125 / JCM 9153;
Takami H., Nakasone K., Takaki Y.;
Takami H., Nakasone K., Takaki Y.;
Submitted (MAR-2000) to the EMBL/Gen
EMBL; APO01508; BAB04222.1; -.
InterPro; IPR000182; -.
Pfam; PF00583; Acetyltransf; 1.
SEQUENCE 174 AA; 19690 MW; 11D88
                                                                                                                                                                                                                                                                                                                                                   Q9KFH6;
01-OCT-2000
01-OCT-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ligase.
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=A3(2);
Bentley S.D.,
Submitted (FEB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0925A6 PRELIMINARY;
0925A6;
01-MAY-1999 (TrEMBLrel. 10,
01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
                                                                                                                                                                                                                              Bacteria; Firmicutes; Bacillus/Clostridium Bacillus/Staphylococcus group; Bacillus.
                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                Bacillus halodurans.
                                                                                                                                                                                                                                                                                                           вн0503.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9KFH6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Redenbach M., Kleser H.M., Denapaite D., Eichner A., Kinashi H., Hopwood D.A.;
Kinashi H., Hopwood D.A.;
"A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a detailed genetic and "A set of ordered cosmids" and a set of ordered cosmids and a set of ordered cosmids and a set of ordered cosmids and a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00501;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the 8 Mb Streptomyces coelicolor A3(2) chromosome.
Mol. Microbiol. 21:77-96(1996).
EMBL: AL035478; CAB36604.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oliver K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bacteria; Firmicutes; Actinobacteria; Actinobacteridae; Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptomyces coelicolor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PUTATIVE LONG-CHAIN-FATTY-ACID-COA LIGASE SC2G5.17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P08659; 1LCI.
InterPro; IPR000873; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=97000351; PubMed=8843436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MDDDLEHRTGTV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                00501; AMP-binding; 1. PS00455; AMP_BINDING;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (FEB-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Harris D.; (FEB-1999)
                                                                                                                                                                                                                                                                                                                                                 0 (TrEMBLrel.
0 (TrEMBLrel.
1 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Parkhill
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     59034 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          64.7%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ᡩ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .J., E
                                                                                                                                                                                                                                                                                                                                                   15,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Barrell B.G., Rajandream
e EMBL/GenBank/DDBJ databa
                                                                                        EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 44; DB Pred. No. 16; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CEB7374431F28CE5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 541;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          physical map for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cullum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
```

11D88EB1C644F5E3 CRC64;

1

```
RESULT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 212 LT
OPT 
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9T215;
Q9T215;
Q1-MAY-2000
                                                                                                                                                                                                                                                          Q9VXP2;
Q9VXP2;
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM .....
STRAIN-NORWICH STOCK;
STRAIN-NORWICH STOCK;
MEDLING-99162580; PubMed-10051617;
MEDLING-99162580; PubMed-10051617;
Hendrix R.W., Smith M.C.M., Burns N., Ford M.E., Hatfull G.F.;
Hendrix R.W., 'A' - nhage.";
                                                                 Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; He
Pterygota; Neoptera; Endopterygota; Diptera;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Smith M.C.M., Burns N., Wilson R.N., Gregory M.A.;
"The complete genome sequence of the Streptomyces temperate phage C31:
evolutionary relationships to other viruses.";
Nucleic Acids Res. 27:2145-2155(1999).
EMBL; AJ006589; CAA07123.1;
EMBL; AJ006589; CAA07123.1;
SEQUENCE 683 AA; 73980 MW; EC114A061EECA4BD CRC64;
    SEQUENCE FROM N.A.
                                                                                                                                                                RHP OR CG8497.
                                                                                                                                                                                                         01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-MAR-2001 (TrEMBLrel. 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-NORWICH STOCK;
MEDLINE-99238410; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Viruses;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteriophage phi-C31.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Smith M.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=NORWICH STOCK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=10719;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPRESSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lambda phage group.
                                                                                                                                                                                                                                                                                                                                                                                                                            474 DDDVERQGAH 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 LDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                          PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LNDWLHHRGGHI 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 7; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dsDNA viruses,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (JUN-1998) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 13, (TrEMBLrel. 13, (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=10219087;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              63.2%;
58.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RNA stage; Tailed phages; Siphoviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43; DB Pred. No. 7.1; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                  Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 683
                                                                                                                                                                                                                                                                                                     648 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N
..
                                                                                            Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

```
Addams ND., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addams ND., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addams ND., Celniker S.E., Holt R.A., Evans C.A., Goslae R.F.,
RA George R.A., Levis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Brandon R.C., Rogers Y.H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Berstaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Byraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Berkova D., Botchan M.R., Bouck J., Brokstein P., Brottlier P.,
RA Bortis K.C., Busam D.A., Buller H., Cadleu E., Center A., Chandra I.,
RA Bortis K.C., Busam D.A., Buller H., Cadleu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gund P., Harris M.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Liu K., Mattei B., McIntosh T.C., McLeod M. H., Ibegwam C.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
Mount S.M., Moy M., Murphy B., Murphy L., Muray D.M., Nelson D.L.,
RA Alle R., Welle R., Welle R., Pacleb J.M.,
RA Welle R., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Strike R., Barley R., Shang G., Zhao Q., Zheng L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                         Q9XYY9 PRELIMINARY;
Q9XXY9;
O1-NOV-1999 (TrEMBLrel. 1
O1-NOV-1999 (TrEMBLrel. 1
O1-MAR-2001 (TrEMBLrel. 1
RHOPHILIN.
                                               RHP OR CG8497.

RHP OR CG8497.

Drosophila melanogaster (Fruit fly).

Drosophila melanogaster (Fruit fly).

Eukaryota; Mectazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

The Action of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Company of the Comp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001478; - Pfam; PF00595; PDZ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FlyBase; FBgn0026374; Rhp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-BERKELEY;
      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AE003500; AAF48516.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            489 DDDEEHDGGY 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SM00228;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           648 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PDZ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           72858 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61.8%;
70.0%;
                                                                                                                                                                                                                                                                            12,
12,
                                                                                                                                                                                                                                                                         Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        85EE4EBC6947D45D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                     718 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 648;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
```

```
RESULT
Q9PEY9
     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RA DR DR DR DR DR DR DR DR DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                              RA Fraga J.S., Franca S.C., Franco M.C., Frohme M., Furlan L.R.,
RA Garnier M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A.,
RA Ho P.L., Hoheisel J.D., Junqueira M.H.S., Gomes S.L., Kitajima J.P.,
RA Ho P.L., Hoheisel J.D., Junqueira M.H., Kemper E.L., Kitajima J.P.,
RA Krieger J.E., Kuramae E.E., Lalgret F., Lambais M.R., Leite L.C.C.,
Lemos E.G.M., Lemos M.V.F., Lopes S.A., Lopes C.R., Machado J.A.,
RA Machado M.A., Madeira A.M.B.N., Madeira H.M.F., Matsukuma A.Y.,
RA Marques M.V., Martins E.A.L., Martins E.M.F., Matsukuma A.Y.,
RA Marques M.V., Martins E.A.L., Martins E.M.F., Matsukuma A.Y.,
RA Menck C.F.M., Miracca E.C., Miyaki C.Y., Monteiro-Vitorello C.B.,
RA Moon D.H., Nagai M.A., Nascimento A.LT., O., Netto L.E.S.,
RA Moon D.H., Nobrega F.G., Nunes L.R., Oliveira M.A.,
RA Moon D.H., Nobrega F.G., Nunes L.R., Oliveira M.A.,
RA de Oliveira M.C., de Oliveira R.C., Palmieri D.A., Paris A.,
RA Quaggio R.B., Roberto P.G., Rodrigues V., de Rosa A.J.M.,
Quaggio R.B., Roberto P.G., Santelli R.V., Sawasaki H.E.,
RA de Rosa V.E. Jr., de Sa R.G., Santelli R.V., Sawasaki H.E.,
RA de Silva A.C.R., da Silva A.M., da Silva F.R., Silva W.A. Jr.,
RA de Souza A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.H.,
RA Vallada H., Van Sluys M.A., Verjovski-Almeida S., Vettore A.L.,
"The Groome Seguence of the Neathers Vibella fastidica".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FlyBase: FBgn0026374; Rhp.
InterPro; IPR000861; -.
InterPro; IPR001478; -.
Pfam; PF00595; PDZ; 1.
Pfam; PF02185; HRl; 1.
CWARD: CROADER: BDZ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simpson A.J.G., Reinach F.C., Arruda P., Abreu F.A., Acencio M., Alvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S., Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S., Bueno M.R.P., Camargo A.A., Camargo L.E.A., Carraro D.M., Carrer H. Colauto N.B., Colombo C., Costa F.F., Costa M.C.R., Costa Neto C.M. Coutinho L.L., Cristofani M., Dias-Neto E., Docena C., El-Dorry H., Faccincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A., Faccincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A., Ferro
                               PROSITE;
                                                                                                                                                                      "The genome sequence of the plant pathogen Nature 406:151-159(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9PEY9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases EMBL; AF132025; AAD31273.1; -
                                                                                                               InterPro; IPR000267; -.
                                                                                                                                         EMBL; AE003928; AAF83699.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=20365717; PubMed=10910347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HEMAGGLUTININ-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9PEY9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=2371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xylella fastidiosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Edwards K.A.,
                                                                                        InterPro; IPR001424;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DDDEEHDGGY 568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SM00228; PDZ;
CE 718 AA; 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity 7; Conserv
PS00144; ASN_GLN_ASE_1; UNKNOWN_1.
PS00087; SOD_CU_ZN_1; UNKNOWN_1.
3282 AA; 343744 MW; F0796430BC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Proteobacteria; gamma subdivision; Xanthomonas group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel. 15,
(TrEMBLrel. 16,
IN-LIKE SECRETED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kaneshiro K., Yamamoto D.;
the Drosophila Rhophilin g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80826 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AF9DD0C57132AA31 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
  F0796430BC9A2194 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
46;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A
                                                                                                                                                                                               Xylella fastidiosa.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           D.M., Carrer H.,
Costa-Neto C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
В
                                 Ş
                                                                                                                                                                                   Q9PBE8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Оy
                                                                                                                                                                                                                                                                         RA Kileger J.E., Kuramae E.E., Laigret F., Lambals M.R., Leite L.C.C.,
RA Lemos E.G.M., Lemos M.V.F., Lopes S.A., Lopes C.R., Marchado J.A.,
Marchado M.A., Madelra A.M.B.N., Madelra H.M.F., Marino C.L.,
Marchado M.A., Marchas E.C., Miyaki C.Y., Monteiro-Vitorello C.B.,
RA Mangues M.V., Marrins E.A.L., Marrins E.M.F., Matsukuma A.Y.,
RA Menck C.F.M., Miracca E.C., Miyaki C.Y., Monteiro-Vitorello C.B.,
RA Moon D.H., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,
RA Moon D.H., Nobrega F.G., Nunes L.R., Oliveira M.A.,
RA Meliveira M.C., de Oliveira R.C., Palmieri D.A., Paris A.,
Peixoto B.R., Pereira G.A.G., Pereira H.A. Jr., Pesquero J.B.,
RA Peixoto B.R., Roberto P.G., Rodrigues V., de Rosa A.J.M.,
RA Duaggio R.B., Roberto P.G., Santelli R.V., Sawasaki H.E.,
RA de Souza A.E., Jr., de Sa R.G., Santelli R.V., Sawasaki H.E.,
RA da Silveira J.F., Silvestri M.L.Z., Siqueira W.J., de Souza A.A.,
RA de Souza A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.H.,
RA de Souza A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.H.,
RA Vallada H., Van Sluys M.A., Verjovski-Almeida S., Vettore A.L.,
RA Vallada H., Zatz M., Meidanis J., Setubal J.C.;
RTM The genome sequence of the plant pathogen Xylella fastidiosa.";
RML; AE004032; AAF84995.1; -.
                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simpson A.J.G., Reinach F.C., Arruda P., Abreu F.A., Acencio M., Alvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S., Barvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S., Barvaros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S., Bueno M.R.P., Camargo A.A., Camargo L.E.A., Carraro D.M., Carrer H., Colaubo C., Costa F.F., Costa M.C.R., Costa-Neto C.M., Coutinho L.L., Cristofani M., Dias-Neto E., Docena C., El-Dorry H., Coutinho L.L., Cristofani M., Dias-Neto E., Docena C., El-Dorry H., Facincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000 (TrembLrel. 15, 01-OCT-2000 (TrembLrel. 15, 01-MAR-2001 (TrembLrel. 16, HEMAGGLUTININ-LIKE SECRETED
                                                                                                                                                                              PROSITE; PS00144; ASN_GLN_ASE_1; UNKNOWN_1.
PROSITE; PS00087; SOD_CU_ZN_1; UNKNOWN_1.
SEQUENCE 3442 AA; 360148 MW; AAE30CDE92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fraga J.S., Franca S.C., Franco M.C., Frohme M., Furlan L.R., Garnler M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A., Ho P.L., Hohelsel J.D., Junqueira M.L., Kemper E.L., Kitajina J.P., Krieger J.E., Kuramae E.E., Laigret F., Lambais M.R., Leite L.C.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HEMAGGLUTININ-LIKE XF2196.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9PBE8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9PBE8
                                                                                                                                                                                                                                            InterPro; IPR000267; InterPro; IPR001424;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-20365717;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Xylella fastidiosa
472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  472 LENDIDNRGGHI 483
                                                                                              Local Similarity
                                     ــــــ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 LDDDLEHQGGHV
                                 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
5; Conserv
                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PubMed=10910347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12
                                                                                              61.8%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61.8%;
41.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gamma subdivision; Xanthomonas group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                              Score 42; DB 2;
Pred. No. 2.4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42; DB
Pred. No. 2.2e
                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                   AAE30CDE923E3C6E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3442 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                 Length 3442;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 3282;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Fri 1)

Jul

9

09:48:08

Q9P9U6; Q9P9U6; 01-OCT-2000

PRELIMINARY,

3455 AA

11

HEMAGGLUTININ-LIKE SECRETED

PROTEIN

Last sequence update)
Last annotation update)

Created)

(TrEMBLrel. 15, (TrEMBLrel. 15, (TrEMBLrel. 16,

```
RESULT
045994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
   SSCHAPPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALD DOT REPARED AND DOT OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RA COUTINHO L.L., Cristofani M., Dias-Neto E., Docena C., El-Dorry H., RA Facincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A., Frach J.S., Franca S.C., Franco M.C., Frohme M., Furlan L.R., RA Fraga J.S., Franca S.C., Franco M.C., Frohme M., Furlan L.R., RA Garnier M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A., RA Garnier M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A., RA Ho P.L., Hoheisel J.D., Junqueira M.L., Kemper E.L., Kitajima J.P., RA Krieger J.E., Kuramae E.E., Laigret F., Lambais M.R., Leite L.C.C., Lemos E.G.M., Lemos M.V.F., Lopes S.A., Lopes C.R., Machado J.A., RA Lemos E.G.M., Lemos M.V.F., Lopes S.A., Lopes C.R., Machado J.A., RA Machado M.A., Madeira A.M.B.N., Madeira H.M.F., Matsukuma A.Y., RA Machado M.A., Martins E.A.L., Martins E.M.F., Matsukuma A.Y., RA Machado M.A., Martins E.A.L., Martins E.M.F., Matsukuma A.Y., RA Menck C.F.M., Miracca E.G., M.yaki C.Y., Monteiro-Yutorello C.B., RA Menck C.F.M., Miracca E.G., Nunes L.R., Oliveira M.A., Nechola M.A., Nobrega F.G., Nunes L.R., Oliveira M.A., Pereira H.A. Jr., Netto D.A., Paris A., Paka Mania A. Jr., Mobrega F.G., Nunes L.R., Oliveira M.A., Pesquero J.B., RA Quaggio R.B., Roberto P.G., Rodrigues V., de Rosa A.J.M., A Quaggio R.B., Roberto P.G., Rodrigues V., de Rosa A.J.M., RA de Solva A.C.R., de Silva A.M., de Silva F.R., Silva W.A. Jr., RA de Silva A.C.R., de Silva A.M., de Silva F.R., Silva W.A. Jr., RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.H., RA Vallada H., Van Sluys M.A., Verjovski-Almeida S., Vettore A.L., The Componer Sequence of the plant pathogen Xviella fastidiose ".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                  045994 PRELIMINARY;
045994;
01-JUN-1998 (Tremblrel CO1-JUN-1998 (Tremblrel CO1-JUN-1998 (Tremblrel CO1-JUN-1999 (Tremblrel CO1-JUN-1999 (Tremblrel CO1-JUN-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000267; -.
InterPro; IPR001424; -.
InterPro; IPR001424; -.
PROSITE; PS00144; ASN_GLN_ASE_1; UNKNOWN_1.
PROSITE; PS00087; SOD_CU_ZN_1; UNKNOWN_1.
CENTIFICE 3455 AA; 360947 MW; 4CD692CB87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simpson A.J.G., Reinach F.C., Arruda P., Abreu F.A., Acencio M., Alvastenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S., Barvarenga R., Alves L.M.C., Araya J.E., Bove J.M., Briones M.R.S., Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S., Bueno M.R.P., Camargo A.A., Camargo L.E.A., Carraro D.M., Carrer H., Colauto N.B., Colombo C., Costa F.F., Costa M.C.R., Costa-Neto C.M.,
Eukaryota; Metazoa;
                            Caenorhabditis elegans
                                                                    ZK1053.2 PROTEIN.
ZK1053.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "The genome sequence of the plant pathogen Xylella fastidiosa."; Nature 406:151-159(2000).
EMBL; AE004082; AAF85560.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=20365717; PubMed=10910347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xylella fastidiosa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=2371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 LDDDLEHQGGHV 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                  | :: | ::::|| :::
LENDIDNRGGHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 5; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Reinach F.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     483
Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
                                                                                                                                         %
66,6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gamma subdivision; Xanthomonas group;
                                                                                                                                                                                                                                                                               PRT;
                                                                                                                              Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arruda P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4CD692CB8752FDAA CRC64;
                                                                                                                                                                                                                                                                               536
                                                                                                                                                                                                                                                                               A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2.4e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 3455;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,;
```

```
RESULT
Q54507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
Q9LWC2
                                                                                                 밁
                                                                                                                          δÃ
                                                                                                                                                                                                                         Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9LWC2 PRELIMINA., Q9LWC2; Q9LWC2; Q1-CCT-2000 (TrEMBLrel. 15, 01-CCT-2000 (TrEMBLrel. 15, 7. 77-7000 (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          elegans.";
Nature 368:32-38(1994).
NATURE 368:32-38(1994).
EMBL; Z82084; CAB04976.1;
EMDL; Z82084; CAB04976.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fulton L.,
Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston L.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Lightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen I
Smaldon N., Smith A., Sonnhammer E., Staden R., Sulston J.,
Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.;
"2.2 M of contiguous nucleotide sequence from chromosome III of C.
Q54507 PRELIMINARY; PRT;
Q54507;
01-NOV-1996 (TrEMBLrel. 01, Created)
                                                                                                                                                                                                                                                                "Oryza sativa nipponbare(GA3) genomic DNA, chromosome clone:P0483F08.";
                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; I
Magnoliophyta; Liliopsida;
                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                       EMBL;
                                                                                                                                                                                                                                                   Submitted
                                                                                                                                                                                                                                                                                            Sasaki T., Matsumoto T.,
                                                                                                                                                                                                                                                                                                         STRAIN-CV.
                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa (Rice).
                                                                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (NOV-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rhabditidae; Peloderinae; Caenorhabditis NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=4530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=94150718; PubMed=7906398;
                                                                                                   169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ||||::|: ||:|
511 LDDDVDHKPRHGGYV 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13
                                                        14
                                                                                                                             N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 LDDDLEHQ---GGHV 12
                                                                                                                 DDDLEHQGGH 11
                                                                                                 EDEVESQGGH 178
                                                                                                                                                                                                                                      tted (MAY-2000) to the EMBL/GenBank/DDBJ databases AP002094; BAA96222.1; -.
                                                                                                                                                     Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                           NIPPONBARE;
                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                         28421 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59.6%;
                                                                                                                                                                    58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                              Yamamoto K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW.
                                                                                                                                                                                                                                                                                                                                                                             Embryophyta; Tracheophyta; Spermatophyta;
Poales; Poaceae; Ehrhartoideae; Oryzeae;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                    Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 40.5; D
Pred. No. 61;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01F70E269ACFD7C4 CRC64;
                                                                                                                                                                                                                         2A5A4BA7DD88B4F4 CRC64;
                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            268
                                                                                                                                                                 DB
36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cooper J., Coulson A.,
                                                                                                                                                                               Length 268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   æ
.
                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ۲,
```

Job time: 988 sec

```
Qy
                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 7
                                                Query Match 58.8
Best Local Similarity 70.0
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                               P72532 PRELIMINARY;
P72532;
01-FEB-1997 (TrEMBLrel. 0:
01-FEB-1997 (TrEMBLrel. 0:
01-OCT-2000 (TrEMBLrel. 1:
FIBRONECTIN-BINDING PROTE
                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-CLINICAL ISOLATE A75;
MEDLINE-96020668; PubMed-7476200;
Kreikemeyer B., Talay S.R., Chhatwal G.S.;
"Characterization of a novel fibronectin-binding surface protein group A streptococci.";
MOI. Microbiol. 17:137-145(1995).
EMBL; X83303; CAA58282.1; -.
HSSP; P02188; 1HRM.
                                                                                                             InterPro; IPR001899; -.
InterPro; IPR002035; -.
Pfam; PF00746; Gram_pos_anchor; 1.
SEQUENCE 1025 AA; 112680 MW; CE6E52FE45CFF5D5 CRC64;
                                                                                                                                                                                                                                                                                                                                      Streptococcus pyogenes.
                                                                                                                                                                                                                                                                                                                                                       SFBII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=95122198; PubMed=7822031;
Rakonjac J.V., Robbins J.C., Fischetti V.A.;
Rakonjac J.V., Robbins J.C., Fischetti V.A.;
Planta sequence of the serum opacity factor of group A streptococci:
identification of a fibronectin-binding repeat domain.";
Infect Immun. 63:622-631(1995).
EMBL; U02290; AAA85219.1; -.
HSSP; P02188; 1HRM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1996 (TremBLrel.
01-OCT-2000 (TremBLrel.
SERUM OPACITY FACTOR.
                                                                                                                                                                                                                                                                                                               Streptococcus
                                                                                                                                                                                                                                                                                                                          Bacteria; Firmicutes; Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001899; -.
InterPro; IPR002035; -.
InterPro; IPR002035; -.
Pfam; PF00746; Gram_pos_anchor; 1.
SEQUENCE 1025 AA; 112770 MW; 327C9C1DFFBD0394 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptococcus pyogenes.
Bactllus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN=M22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptococcus.
809 DEDLEISGGH 818
                                                                                                                                                                                                                                                                                                  NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=1314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |:||| |||
| 809 DEDLEISGGH 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity hes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                            15
             2 DDDLEHQGGH 11
|:||| |||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 DDDLEHQGGH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                           58.8%; ·
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58.8%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                               02, Created)
02, Last sequence update)
15, Last annotation update)
TEIN II.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01,
                                                  1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                Score 40; DB 2;
Pred. No. 1.5e+02,
l; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                1025 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
1.5e+02;
                                                                       Length 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1025;
                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                      in
                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
```

Search completed: July 6, 2001, 09:25:52

```
Minimum
Maximum
                                                                                                                                                                                                                                                                                           Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB DB
                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              seq
    of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                   Issued_Patents_Ah:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                           Match
                                                                                                                                                                                                                                                                                                     Query
   US-09-437-912-3
79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        July 6, 2001, 09:10:20; Search time 56.74 Seconds (without alignments)
4.260 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193259 seqs, 20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                                                                                 /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                           Length DB
   345
345
339
575
575
575
575
637
637
637
637
1199
1193
3133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 4.5 (c) 1993 - 2000 Comp
 US-08-188-582-20
US-08-646-715-20
US-08-918-727-7
US-09-205-680A-7
US-09-205-680A-7
US-09-107-858-14
US-08-758-621-2
US-09-107-858-2
US-09-393-318A-8
US-08-933-318A-8
US-08-172-3318-2
US-08-172-3318-2
US-08-072-064-1
US-08-072-064-6
US-08-072-064-6
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-08-686-528A-3
US-08-686-528A-3
                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             193259
                                                                                                                                                                                                                                                                                          Description
  sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
sequence
                                                                                                                                                                          Sequence
Sequence
Sequence
                                                                                                                                                                                                                    Sequence
Sequence
                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                       Sequence
20, Appl
7, Appli
14, Appli
21, Appli
22, Appli
23, Appli
8, Appli
8, Appli
8, Appli
8, Appli
9, Appli
1, Appli
6, Appli
6, Appli
1, Appli
1, Appli
1, Appli
2, Appli
3, Appli
3, Appli
3, Appli
3, Appli
3, Appli
```

LILI-4187 LILI-4187 LICATION DATA:  EIM PC compatible  S SYSTEM: PC-DOS/MS-DOS  S PATENTIN Release #1.0, Version # PLICATION DATA:  ION NUMBER: US/08/188,582 ATION: 435 ENT INFORMATION: BINT INFORMATION: LICATION INFORMATION: ECATION INFORMATION: E: (415) 781-1989 (415) 398-3249 310 27729 30R SEQ ID NO: 20: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERISTICS: LARACTERI	RESULT 1  S-08-188-582-20  Sequence 20, Application US/08188582  Patent No. 5534410  GENERAL INFORMATION: GENERAL INFORMATION: APPLICANT: Tjian, Robert APPLICANT: Comai, Lucio APPLICANT: Dynlact, Brian D. APPLICANT: Hoey, Timothy APPLICANT: Hoey, Timothy APPLICANT: Tanese, Naoko APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Wang, Edith APPLICANT: Beinzeller (CIDS CORRESPONDENCE ADDRESS: 36  CORRESPONDENCE ADDRESS: ADDRESSEE: FLEHR, HOHBACH, TEST STREET: 4 Embarcadero Center, S CITY: San Francisco STATE: California	337 4 US-09-456-287-2 302 2 US-08-007-107-4 355 2 US-08-677-858-4 355 3 US-09-107-858-4 355 2 US-09-252-571-2 363 2 US-09-252-571-2 31 US-09-346-849-5 31 US-08-651-818A-23 2 US-08-651-818A-5 32 US-08-651-818A-5 33 US-08-651-818A-5 34 3 US-08-651-818A-5 35 US-08-651-818A-5 37 US-08-651-818A-5 38 US-08-651-818A-5 39 US-08-651-818A-5 30 US-08-651-818A-5 31 US-08-651-818A-5 32 US-08-115-032-1 33 US-08-115-032-1
S . 0, Vers 582 50-2/AJ	α, α, β, α, α, α, α, α, α, α, α, α, α, α, α, α,	9-456-287-2 8-007-107-4 8-007-107-4 8-758-621-4 9-107-858-4 9-107-858-4 9-252-571-2 9-434-065-2 9-434-065-2 9-434-849-53 8-36-849-53 8-651-818A-21 8-651-818A-24 8-651-818A-24 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8 8-780-496-8

Query Match

64.6%;

Score 51;

DB 1;

Length 1213;

Pred. No.

```
망
                               RESULT 3
US-08-918-727-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                 US-08-646-715-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-646-715-20
                                                                                                                                                               Query Match
Best Local S
Matches 8
Sequence 7, Application US/08918727 Patent No. 5849528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 72.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 20, Application US/08646715 Patent No. 5637686
                                                                                                                                                                                                                                                                                                         TELEFAX: (415) 398-324
TELEX: 910 277299
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 1213 amino aci.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                 1160 HKHKHKHRHSK 1170
                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 781-1989 TELEFAX: (415) 398-3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/188,582
EILING DATE: 28-JAN-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25
CURRINT APPLICATION DATA:
APPLICATION NUMBER: US/08/646,715
FILING DATE: 09-MAY-1996
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Weinzierl, Robert O.J.
TITLE OF INVENTION: TATA-BINDING PROTEIN ASSOCIATED FACTORS,
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING TAFS AND METHODS OF USE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1160 HKHKHKHRHSK 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                               Local Similarity
nes 8; Conserv
                                                                                                                                                                                                                                                                          TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 36,627
REFERENCE/DOCKET NUMBER: A-57650-2/AJT/RAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                               2 НКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ŋ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SSEE: FLEHR, HOHBACH, TEST, ALBRITTON & HERBERT
T: 4 Embarcadero Center, Suite 3400
San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94111-4187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     California
                                                                                                                                                                                                                                                                                                              1213 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tjian, koper
Comai, Lucio
                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wang, Edith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tanese,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ruppert, Siegfried Tanese, Naoko
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dynlact, Brian D. Hoey, Timothy
                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Richard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    72.78;
                                                                                                                                                                            64.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
6
                                                                                                                                                                                                                                                                                                                                             20:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                              Score 51; I
Pred. No. 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                            DB 1; Length 1213;
6.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                              밁
```

```
RESULT 4
US-09-205-680A-7
                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-918-727-7
                                                                                                                                                                                       Sequence 7, Application US/09205680A Patent No. 6103497
                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION: APPLICANT: Hillman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION FOR SEQ ID NO:
                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
TELEPHAX: 650-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: PastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                            CORRESPONDENCE ADDRESS
                                                              APPLICANT: Lal, Preeti
APPLICANT: Shaib, urvi
TITLE OF INVENTION: HUMAN S100 PROTEINS
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                  IMMEDIATE SOURCE:
LIBRARY: GenBa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                    102 GHDHRHGKGCGK 113
 ADDRESSEE: Incyrcan Drive
STREET: 3174 POI
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: Herewi
                                                                                                                                                                                                                                                                                                                                            Local Similarity 66.7 les 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                               1 СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                    r: GenBank
488157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              113 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E: Incyte Pharmaceuticals, Inc. 
3174 Porter Drive
                                                                                                                           Bandman, Olga
Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shah, Purvi
VENTION: HUMAN S100 PROTEINS
                                                                                                                                                       Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bandman, Olga
Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lal, Preeti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hillman, Jennifer
                              Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Olga
                                                                                                                                                                                                                                                                                                                                                            63.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US/08/918,727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36,749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PF-0373 US
                                                                                                                                                                                                                                                                                                                                                          Score 50; DB 2; Pred. No. 0.91;
                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                          Length 113;
                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                              Gaps
```

0;

COUNTRY:

0;

```
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-205-680A-7
                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-758-621-14
                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                             Sequence 14, Application US/08758621 Patent No. 5846821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
           FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/018
FILING DATE: 29-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Silveri, Jean M.
REGISTRATION NUMBER: 39,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO:
                                                                                                                                   SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: LBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Guerino TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Colette C. Muenzen
REGISTRATION NUMBER: 39,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: Herewitl CLASSIFICATION: 530 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IMMEDIATE SOURCE:
LIBRARY: GenBai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         102 GHDHRHGKGCGK 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 650-845-4166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER:
REFERENCE/DOCKET NUMBER:
                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                       ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                02109-1875
                                                                                                                                                                                                                                                                          Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9,4304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid
                                                                                                                                                                                                                                                           Massachusetts
                                                                                                                                                                                                                                                                                      E: LAHIVE & COCKFIELD 60 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 113 amino acids
                                                                                                                                                                                                                                                                                                                                                Guerinot, Mary Lou, and Eide, David J. VENTION: Metal-Regulated Transporters a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenBank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    63.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/09/205,680#
                                                                          60/018,578
                                                                                                                       US/08/758,621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39,784
               39,030
DCI-099CP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PF-0373 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 50; D
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                   Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 3;
0.91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ω
,-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                    and Uses Therefor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
Query Match
Best Local Similarity
"-+~hes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                     US-08-758-621-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; ORGANISM: Arabidopsis thaliana US-09-107-858-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-107-858-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-758-621-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQ ID NO 14
                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/08758621 Patent No. 5846821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 14, Application US/09107858 Patent No. 6162900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Guerinot, Mary Lou et al.
TITLE OF INVENTION: METAL-REGULATED TRANSPORTERS AND USES THEREFOR
FILE REFERENCE: DCI-099CPDV
CURRENT APPLICATION NUMBER: US/09/107,858
                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EARLIER APPLICATION NUMBER: 08/758,621 EARLIER FILING DATE: 1996-11-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT FILING DATE: 1998-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
TELEPHONE: (617)227-7400
TELEPAX: (617)227-5941
INFORMATION FOR SEQ ID NO: 14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 34
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS: 27
                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                  APPLICANT: Guerinot, Mary Lou, and Eide, David J.
TITLE OF INVENTION: Metal-Regulated Transporters and Uses Therefor NUMBER OF SEQUENCES: 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                          167 GHNHSHGHG 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167 GHNHSHGHG 175
                                                                                                                                                                  STREET: 60 St
CITY: Boston
APPLICATION NUMBER:
                                                                                                                                  COUNTRY:
                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                        1 СНКНКНСНС 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 СНКНКИСНС 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              345
                                                                                                                   02109-1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                                                                                  Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 345 amino acids
                                                                                                                                                                                    60 State Street
                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                      LAHIVE & COCKFIELD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63.3%;
77.8%;
US/08/758,62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 50; D
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                               Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2;
2.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 4;
2.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

0;

```
Query Match
Best Local Similarity
7; Conserv
                                                                                                                                                                   US-09-032-315-8
                                                                                                                                                                                                                                DЬ
                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                      ; LENGTH: 339
; TYPE: PRT
; ORGANISM: Arabidopsis thaliana
US-09-107-858-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
7; Conserve
                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 8
US-09-107-858-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; MOLECULE TYPE: US-08-758-621-2
                                                                                Sequence 8, Application US/09032315
Patent No. 5985818
GENERAL INFORMATION:
APPLICANT: Svendsen, Allan
APPLICANT: Xu, Feng
TITTE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Guerinot, Mary Lou et al.
APPLICANT: Guerinot, Mary Lou et al.
TITLE OF INVENTION: METAL-REGULATED TRANSPORTERS AND USES THEREFOR
FILE REFERENCE: DCI-099CPDV
CURRENT APPLICATION NUMBER: US/09/107,858
CURRENT FILING DATE: 1998-06-30
CURRENT FILING DATE: 1998-06-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09107858 Patent No. 6162900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EARLIER APPLICATION NUMBER: 08/758,621
EARLIER FILING DATE: 1996-11-27
NUMBER OF SEQ ID NOS: 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (617)227-5941
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 339 amino acids
TYPE: amino acid
                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: DC TELECOMMUNICATION INFORMATION: 1617)227-7400
                                                           NUMBER OF SEQUENCES:
                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 29-MAY-1996
ATTORNEY/AGENT INFORMATION:
NAME: Silveri, Jean M.
REGISTRATION NUMBER: 39,0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                154 HGHGHGHG 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      154 нененене 161
 CITY:
              STREET:
                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 HKHGHGHG 11
| |||||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                             4 HKHGHGHG 11
New York
            E: No. 59858180 No. 5985818disk of No. 5985818th America, Inc 405 Lexington Avenue
                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ver.
                                                                          LACCASE MUTANTS
                                                                                                                                                                                                                                                                                                          60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60/018,578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39,030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                          Score 48; I
Pred. No. 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 48; I
Pred. No. 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DCI-099CP
                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                         DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                          ۲.
                                                                                                                                                                                                                                                                                                                       Length 339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ОĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: linear; MOLECULE TYPE: protein US-09-032-315-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-993-318A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 8, Applic Patent No. 5998353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                          APPLICATION NUMBER: US/08/
FILING DATE: December 18,
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Gregg, Valeta A.
REGISTRATION UMBER: 33,72
REFERENCE/DOCKET NUMBER: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 212-878-9655 INFORMATION FOR SEQ ID NO:
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                             COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30 (EPO)
                              TELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123
TELEFAX: 212-878-9655
                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
ADDRESSEE: No. 59983530 No. 5998353disk of No. 5998353th America
                                                                                                                                                                                        SOFTWARE: PatentIn Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 575 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: ROZEK, Carol
REGISTRATION NUMBER: 36,993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Cherry, Joel TITLE OF INVENTION: LAC
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 52
TELECOMMUNICATION INFORMATION:
TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                       CITY: Ne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          331 HKHKHGRGLLSGHG 344
                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US/09 FILING DATE: 27-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 HKHKHGH----GHG 11
                                                                                                                                                                                                                                                                                             10174
                                                                                                                                                                                                                                                                                                                        New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/08993318A
                                                                                                                                                                                                                                                                                                                                           405 Lexington Avenue
                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                      Schneider, Palle
Rasmussen, Grethe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Svendsen, Allan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pedersen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IBM Compatible
                                                                                                                                                           December 18,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                          LACCASE MUTANTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Anders
                                                                                                                                                                          US/08/993,318A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/09/032,315
                                                                                           33,728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
 8
                                                                             5032.200-us
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5200.200-US
                                                                                                                                                             1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 48; DB Pred. No. 8.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 575;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
```

۲,

```
Qy
밁
                         Ş
                                                                                                                              ; MOLECULE TYPE: US-09-399-886-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         us-09-399-886-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-993-318A-8
                                                       Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 8, Applio
Patent No. 6140092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/93
APPLICATION NUMBER: 18,
FILING DATE: December 18,
ATTORNEY/AGENT INFORMATION:
NAME: Gregg, Valeta A.
REGISTRATION NUMBER: 33,72
REGISTRATION NUMBER: 33,72
                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Cherry, Joel
TITLE OF INVENTION: LAC
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 575 amino acid
                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
331 HKHKHGRGLLSGHG 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  331 HKHKHGRGLLSGHG 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 405 Lex
CITY: New York
                                                                                                                                                         STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
nes 9; Conserv
                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                              TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
                                                                                                                                                                                                     LENGTH:
                           2 НКНКНСН----СНС 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2 HKHKHGH----GHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10174
                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09399886
                                                                                                                                                                                                   575 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 405 Lexington Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                              212-878-9655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Svendsen, Allan
Schneider, Palle
Rasmussen, Grethe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pedersen, Anders
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PatentIn Release #1.0, Version #1.30 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                No. 61400920 No. 6140092disk of No. 6140092th America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein
                                                                                                                                          protein
                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LACCASE MUTANTS
                                                                     60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60.8%;
                                                                                                                                                                                                                                                                                                                                                              08/993,318
Der 18, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                     US/09/399,886
                                                                                                                                                                                                                                                                                                                    33,728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,:
                                                                     Score 48;
Pred. No.
                                                                                                                                                                                                                                                                                                          5032.200-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 48; DB Pred. No. 8.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                    DB 4;
                                                                                  Length 575;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 575;
                                                       4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

```
RESULT 13
US-08-172-331B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: protein US-09-396-260-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
US-09-396-260-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08172331B Patent No. 5480801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 8, Application Patent No. 6184015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: 212-878-9655 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                      APPLICANT: Wahleithner, APPLICANT: Christensen, APPLICANT: Schneider, Pa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 36,993
REFERENCE/DOCKET NUMBER: 52
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS: ADDRESS: NO. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 6184015 No. 61840
                                                                                                                                                                                                                                         TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION: NAME: Rozek, Carol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Svendsen APPLICANT: Xu, Feng TITLE OF INVENTION:
                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          331 HKHKHGRGLLSGHG 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09/032,315 FILING DATE: 27-FEB-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                   STREET:
                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity les 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/09/396,260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 HKHKHGH----GHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New York
                                                                   New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09396260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ΝY
                                                                                                          405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                405 Lexington Avenue
                                                                                                                                                                                                                                                                                                             Schneider, Palle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Svendsen, Allan
                                                                                                                                                                                                                                                                                                                                                                         Wahleithner, Jill A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                      No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             212-867-0123
                                                                                               Lexington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single
                                                                                                                                      5480801o No. 5480801disk of No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60.8%;
64.3%;
                                                                                                                                                                                                                                      PURIFIED PH NEUTRAL ACIDS ENCODING SAME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LACCASE MUTANTS
                                                                                                      Avenue
                                                                                                                                                                                                                                                                                                                                     Bjoern E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5200.200-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 48; DB Pred. No. 8.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 4;
                                                                                                                                                                                                                                                                             LACCASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 575;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                      5480801th America,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps -
```

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS

PatentIn Release #1.0, Version #1.25

0;

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-137-614A-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-172-331B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                 atent No.
                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                    STREET: CLIC
CITY: Rochester
CTATE: New York
                                                                                                                                                                                                                                                                                                                                          APPLICANT: Soderlund, David M.
APPLICANT: Knipple, Douglas C.
APPLICANT: Henderson, Joseph E.
TITLE OF INVENTION: Gene Encoding An Insect
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/122,230
FILING DATE: 17-SEP-1993
PRIOR APPLICATION DATA:
                                                                    CURRENT APPLICATION DATA:
                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: Gene Encoding An Insect
TITLE OF INVENTION: Gamma-Aminobutyric Acid (GABA) Receptor Subunit
                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION: TELEPHONE: 212-867-0123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US 08/162,827 FILING DATE: 03-DEC-1993 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 00 FILING DATE: 17-SEP-1993 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Rel-
CURRENT APPLICATION DATA:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       332 HKHKHGRGLLSGHG 345
                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                  APPLICATION NUMBER: US/08/137,614A FILING DATE: 15-OCT-1993 CLASSIFICATION: 435
                                                                                                                                            MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: 212-878-9655
                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Lowney Dr., Karen A REGISTRATION NUMBER: 31,2
                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 22-DEC-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 HKHKHGH----GHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                   14603
                                                                                                                                                                                                                                                                                                                                                                                                                                 b, Application US/08137614A
5487976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 576 amino acids amino acid
                                                                                                                                                                                                                                                 Clinton Square, p.O. Box 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                     Nixon, Hargrave, Devans & Doyle
                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US 08/122,827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/172,331B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 48; DB 1;
Pred. No. 8.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4052.020-US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
```

```
δÃ
US-08-072-064-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-072-064-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
7; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-137-614A-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Patent No. 6008046
                                                                                                                                                                          TELEFAX: 415/397-8338 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: (716)263-160
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 770,881
FILING DATE: 04-OCT-1991
ATTORNEY/AGENT INFORMATION:
NAME: CARROLL, PETER G.
                                             POSITION IN GENOME:
                                                                             ORIGINAL SOURCE:
                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 637 amino acids
                                                                                                                                                                                                                     REGISTRATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: OP
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                          MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 617 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          434 GPEHGHGHGH 443
                               CHROMOSOME/SEGMENT:
                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: FILING DATE: 19930
              MAP POSITION:
                                                              ORGANISM:
                                                                                                                      TYPE: AMINO ACID
                                                                                                                                                                                                      TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CITY: San
STATE: Cal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: PETER G. ....
STREET: 220 Montgomery Street,
                                                                                                            FOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 СНКНКНСНСН 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REGISTRATION NUMBER: 34,103
REFERENCE/DOCKET NUMBER: 19603/120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Application US/08072064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                617 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JACKSON, MEYER B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (716)263-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       United States of America
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                            unknown
                                                           Drosophila melanogaster
                                                                                                                                                                                                         415/705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (716)263-1636
                                                                                          peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Floppy disk
                                                                                                                                                                                                                                                                                                                                                               19930602
           MENT: III; polytene subregion approximately map unit 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DRUG AND PESTICIDE SCREENING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       59.5%;
                                                                                                                                                                                                                                                                                                                                                                                                           Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                             US/08/072,064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26:
                                                                                                                                                                                                                                       OPHD-00574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 47;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Suite 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 617;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

0; Gaps 0;
------------

. . . -

```
Result
No.
                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM protein - protein search, using sw model
  Pred. No. is the number of results predicted by chance score greater than or equal to the score of the result and is derived by analysis of the total score distribu
                                                                                                                                                                                                               Score
 Query
Match
                                                                                                                                                                                                                                                                           PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                               BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-437-912-3
79
                                                                                                                                                                                                                                                                                                                                                                                                                                               July 6, 2001, 09:17:58; Search time 73.59 Seconds (without alignments) 12.421 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                   219241 seqs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                      1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                              Length
2038
535
1085
515
515
318
264
639
224
336
378
290
290
315
199
251
1344
                                                                                                                                  644
619
621
189
389
398
490
503
507
                                                                                                                                                                                                               DВ
A25486
T34937
T49164
C27115
A27115
A27116
T48099
T34168
T47986
T47986
T05310
                                                                                                                                                                                  KGHUH1
KGBOH2
KGBOH1
                                                                                                                                                                                                                                   SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                      219241
hypothetical prote probable transcrip
               9d 9d 9 9 9d d 4 9 9d b 8 8d d 9 8 8 d d 9
```

45	44	43	42 .	41	40	39	38	37	36	35	34	33	32	31	30
51	51	51	51	51	52	52	52	53	53	53	53	53	53.5	54	54
64.6	64.6	64.6	64.6	64.6	65.8	65.8	65.8	67.1	67.1	67.1	67.1	67.1	67.7	68.4	68.4
1213	1213	1028	457	203	436	314	110	529	196	196	177	160	173	1920	1891
2	ν	Ν	Ν	N	N	Ν	2	N	N	N	Ν	2	N	N	N
A54063	S16356	A56038	S39079	T36240	149714	T35241	T07618	T08684	A49987	D85999	S65780	T07180	T51469	T13893	T13594
TATA-binding prote	ovo protein - frui	DNA-binding protei	puff C-8 protein -	hypothetical prote	MHC H-2K/t-w5-link	hypothetical prote	cold stress protei	hypothetical prote	probable fkbP-type	hypothetical prote	glycine/proline-ri	hypothetical prote	glycine/proline-ri	gene hindsight pro	hypothetical prote

#### ALIGNMENTS

-	
	KGHUHI 1
	N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen; prokininogen N;Contains: bradykinin (kallidin I); HMW kininogen I; HMW kininogen II; low molecular
	C;Species: Homo sapiens (man) C;Date: 28-May-1986 #sequence_revision 28-May-1986 #text_change 08-Dec-2000 C:Date: 28-May-1986 #sequence_revision 28-May-1986 #text_change 08-Dec-2000
	R;Ohkubo, I.; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M. Biochemistry 23, 5691-5697, 1984
	A;Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide A;Reference number: A90490; MUID:85122621
e to have a	A; Molecule type: mRNA A: Residues: 1-389 CHK>
t being printed,	A;Cross-references: GB:K02566; NID:g177889
ution.	R;Takagaki, Y.; Kitamura, N.; Nakanishi, S. J. Biol. Chem. 260, 8601-8609, 1985
	A;Title: Cloning and sequence analysis of cDNAs for human high molecular weight and l A;Reference number: A92544; MUID:85234582
Description	A; Accession: A25276
DON'T TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE P	A; Molecule Lype: HIKNM A; Residues: 1-592, 'I', 594-644 <tak></tak>
kininogen, HMW pre	A;Cross-references: GB:M11437; NID:918751; PIDN:AAB59550.1; PID:9386852
kininogen, HMW I p	R;Auersward, E.A.; RoesSier, D.; Mentere, R.; Asstarg-Machietot, I. FEBS Lett. 321, 93-97, 1993
peptidyl-prolyl ci hypothetical prote	A;Title: Cloning, expression and characterization of human kininogen domain 3. A:Reference number: S32422: MTID:93223854
probable zinc tran	A;Accession: S32422
nypothetical prote	A; MOLECULE Type: mRNA
zinc transport pro	A; Note: differences are due to known cloning artifacts
chorion protein s3	R:Lottspeich, F:: Kellermann, J:: Henschen, A:: Foertsch, B:: Muller-Esterl, W.
hypothetical prote	A;Title: The amino acid sequence of the light chain of human high-molecular-mass kini
female sterile hom	A;Reference number: A91153; MUID:86030270
gene pipsqueak pro	A; McCession: A91153 A: Molecule type: protein
hypothetical prote	A; Residues: 379-644 < LOT>
related to spliceo	A; Note: the bradykinin sequence preceding the light chain sequence was not determined
kininogen, HMW I p	R) Relief Hamilton, Four Special, F.; Helischen, A.; Mueller Estell, W. Eur. J. Blochem. 154, 471-478, 1986
hypothetical prote	A;Title: Completion of the primary structure of human high-molecular-mass kininogen.
zinc transporter-l	A; Accession: A24871
K-kininogen, LMW p	A; Molecule type: protein
hypothetical prote	R; Kellermann, J.: Lottspeeich, F.: Henschen, A.: Mueller-Esterl, W.
hypothetical prote	in Kinins IV, Greenbaum, L.M., and Margolius, H.S., ed., pp.85-89, Plenum Press, New
hypothetical prote	A;Tille: Amilio acid sequence of the right chain of numan high morecular mass kininoge A:Reference number: A27899
probable transcrip	A; Accession: A27899

Mr. A. Parting

THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE P

```
A; Molecule type: protein
A; Residues: 264-359, 'N', 361-375 <LEN2>
A; Residues: 254-359, 'N', 361-375 <LEN2>
A; Rittle, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A; Title: Human mast cell tryptase isoforms: separation and examination of substrate-spec A; Reference number: S55239; MUID:95251593
A; Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; McCcccarde type: protein
A; Molecule type: protein
A; Residues: 380-389 <MIN>
A; Residues: 380-389 <MIN>
A; Residues: 380-389 <MIN>
A; Redda, H.; Matsumura, Y.; Kato, H.
R; Maeda, H.; Matsumura, Y.; Kato, H.
J. Biol. Chem. 263, 16051-16054, 1988
A; Title: Purification and identification of [hydroxyprolyl(3)]bradykinin
A; Title: Purification and identification of [hydroxyprolyl(3)]bradykinin
A;Molecule type: protein A;Residues: 431-434 <STR> A;Residues: 431-434 <STR> B;Residues: 431-6434 <STR> C; Fukushima, D.; Takagaki, Y.; Miyata, T.; Nakanishi, J. Biol. Chem. 260, 8610-8617, 1985 A;Title: Structural organization of the human kininogen gene and a model for its A;Reference number: A92545; MUID:85234583
                                                                                                                                                                                                                                                                          A; Molecule type: protein
A; Residues: 450-452, 'X', 454, 'X', 456 <LIT>
R; Straczek, J; Maachi, F; le Nguyen, D.;
FEBS Lett. 373, 207-211, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 380-389 < KAT3>
R: Lenarcic, B: Krasovec, M.; Ritonja, A.;
FEBS Lett. 280, 211-215, 1991
A; Title: Inactivation of human cystatin C
A; Reference number: S14303; MUID:91192133
A; Accession: S14447
                                                                                                                                                                                               A; Accession: S68059
                                                                                                                                                                                                                        A; Title: Purification from human plasma of A; Reference number: S68059; MUID:96033974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Kato, H.; Matsumura, Y.; Maeda, H.
FEBS Lett. 232, 252-254, 1988
A;Title: Isolation and identification of hydroxyproline analogues
A;Reference number: A61495; MUID:88211869
A;Accession: A61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
A; Residues: 379-389; K', 390-407; Q', 409-644 <KEL2>
R; Mindroiu, T.; Carretero, O.A.; Proud, D.; Walz, D.; Scicli, Biochem. Biophys. Res. Commun. 152, 519-526, 1988
A; Title: A new kinin moiety in human plasma kininogens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: protein
A; Residues: 381-389 < KAT2>
A; Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Experimental source: urine A; Note: this peptide had Pro A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Mclecule type: protein
A; Mesidues: 1-19;189-192;310-314;381-389 <LEN1>
A; Residues: 1-19;189-192;310-314;381-389 <LEN1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: protein
A;Residues: 380-389 <SAS>
R;Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok,
Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A;Title: Human cathepsin B and cysteine proteinase inhibitors
A;Reference number: S02482; MUID:89076517
A;Accession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A;Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin released
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein A; Residues: 381-389 <MAE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A27699; A; Accession: A27699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Note: this peptide had Pro-383 modified to 4-hydroxyproline
A;Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 380-389 < KAT1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Reference number: A34030; MUID:88106632
A;Accession: A34030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pro-383 modified to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MUID:88209021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ritonja, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                    a tetrapeptide that potentiates insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Olafsson,
                                                                                                                                                                                                                                                                                                               Becchi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 kininogen
                                                                                                                                                                                                                                                                                                            M.; Heulin, M.H.; Nabet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          I.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              by human cathepsin D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CPIS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of bradykinin
                                        model for its evolut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   in ascitic flu.
                                                                                                                                                                                                                                                                                                            P.; Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in
                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          humar
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ano
```

```
F;19-33/Domain: Hww kininogen heavy chain #status experimental <HCH>
F;19-31/Domain: cystatin homology <CYI>
F;142-253/Domain: cystatin homology <CYI>
F;264-375/Domain: cystatin homology <CYI>
F;264-375/Domain: cystatin homology <CYI>
F;264-375/Domain: cystatin homology <CYI
F;380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <BDY>
F;381-389/Product: bradykinin (kallidin II) #status experimental <CH>
F;381-389/Product: bradykinin (kallidin II) #status experimental <CCH>
F;390-644/Domain: Hww kininogen light chain #status experimental <CCH>
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;421-5
A; Accession: A91923
A; Molecule type: protein
A; Residues: 376-391 <KAT>
                                                                                                                          R:Kato, H.; Nagasawa, S.; Suzuki, T.
J. Biochem. 67, 313-323, 1970
A;Tille: Studies on the structure of bovine kininogen:
A;Reference number: A91923; MUID:70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999
C;Accession: A01282; A91923; A91941; A91938; B29559
C;Accession: A01282; A91923; A01941; A91938; B29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3 C;Superfamily: kininogen; cystatin homology C;Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; F;1-18/Domain: signal sequence #status experimental <SIG> F;1-644/Product: HMW kininogen I (prokininogen) #status experimental <MAT1> F;19-379,390-644/Product: HMW kininogen II #status experimental <MAT2> F;19-379,390-644/Product: HMW kininogen II #status experimental <MAT2>
                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: mRNA
A; Residues: 1-619 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Kitamura, N.; Takagaki, v
Nature 305, 545-549, 1983
A;Title: A single gene for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 kininogen, HMW II precursor – bovine
N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen
N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinin
                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:V01492; GB:K01758; NID:g493; PIDN:CAA24736.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C:Comment: The HMW kininogen precursor and the LMW form are produced from the C:Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiat C:Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chac; Comment: Bradykinin, released from kininogen by kallikrein, is a potent vaso xyproline residue is present in the kininogen prior to the release of bradykin
                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: A01282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Pierce, J.V.
Fed. Proc. 27, 52-57,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Map position: 3q27-3q27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GDB:125256; OMIM:228960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: GDB: KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Contents: annotation; bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: Structural features of plasma kinins and kininogens A; Reference number: A91455; MUID:90255622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A93317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Y.; Furuto, S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        povine high molecular weight and {\tt MUID:84014106}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 79;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tanaka,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0.00029;
thes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T.; Nawa,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 644
                                                                                                                                                                            cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H.; Nakanishi, S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 molecular weight kini
                                                                                                                                                                            of disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                potent vasodilator of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                            bonds
```

Kato, H.;

lwanaga,

s.;

Suzuki,

```
C:Comment: Bradykinin, released from kininogen by kallikrein, is a potent vaso xyproline residue is present in the kininogen prior to the release of bradykin C;Superfamily: kininogen; cystatin homology C:Keywords: alternative splicing; blood coagulation; cysteine proteinase inhib F;1-18/Domain: signal sequence #status predicted <SIG>F;19-619/Product: HMW kininogen II #status predicted <MAT>F;19-376/Product: HMW kininogen II #status predicted <MAT>F;19-370/Domain: cystatin homology <CYI>F;19-130/Domain: cystatin homology <CYI>F;141-252/Domain: cystatin homology <CYI>F;261-372/Domain: cystatin homology <CYIP;261-372/Domain: cystatin homology <CYIP;377-386/Product: lysyl-bradykinin (kallidin II) #status experimental <RBDY>F;378-386/Product: bradykinin (kallidin I) #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH>F;38-619/Product: HMW kininogen II light Chain #status experimental <CH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  F;47/Binding site: carbohydrate (Asn) (covalent) #status absent
F;87,168,169,204,280/Binding site: carbohydrate (Asn) (covalent) (covalent) #status experimental
F;135/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental
F;197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F;376-377/Cleavage site: Met-Lys (kallikrein) #status experimental
F;380/Modified site: 4-hydroxyproline (Pro) #status predicted
F;380-387/Cleavage site: Arg-Ser (kallikrein) #status experimental
F;391,398,518,522,534,546,551,568/Binding site: carbohydrate (Ser) (covalent) #status experimental
F;397,398,518,522,534,546,551,568/Binding site: carbohydrate (Thr) (covalent) #status
F;496-497/Cleavage site: Arg-Thr (kallikrein) #status experimental
                                                                                                  20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;418-488/Region: glycine/histidine/lysine-rich
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex
F;27-589,82-93,106-125,141-144,205-217,228-247,261-264,325-337,348-367/Disulfide
F;47/Binding site: carbohydrate (Asn) (covalent) #status absent
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Comment: The HMW kininogen precursor is produced from the same gene as the LMW form as C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of the C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is important to the comment of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cystem of the cy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: The amino acid sequence of the light chain of A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine c R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S. Seikagaku 56, 808, 1984
A;Title: Disulfide bonds in bovine HMW kininogens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;ACCESSION. A;ACCESSION. A;Rolecule type: protein
A;Residues: 'Z',20-104,'E',106-256,'XX',257-376
A;Residues: 'Z', Rellermann, J.; Henschen, A.;
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Title: Studies on the primary structure A; Reference number: A91938; MUID: 75170265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Note: 398-Pro, 401-Val, and 455-Lys R; Han, Y.N.; Komiya, M.; Iwanaga, S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A91941;
A; Accession: A91941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Title: Primary structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Note: article in Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A94300
                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Molecule type: protein Residues: 387-455 <HAN>
                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J. Biochem. 152,
470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             398-Pro, 401-Val,
                                                                                                       1 GHKHKHGHGHGK 12
GHGHKHGHGHGK
                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kellermann, J.; H
152, 307-314, 1985
481
                                                                                                                                                                                                                                                                         91.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or bowine plasma high-molecular-weight kininogen. The amino \mbox{\tt MUID:}\,76260155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from kininogen by kallikrein, is a potent vasodilator, the kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                         Score 72; DB 1;
Pred. No. 0.0029;
                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    were also
Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       bovine high-molecular-weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <SUE>
Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H.; Hayashida, H.; Miyata,
                                                                                                                                                                                                                                                                                                                       Length 619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human high-molecular-mass
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence, positions
                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      binding
                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inhibitor; dup
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        T.; Iwanaga
                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    experimen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bonds:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
```

RESULT

```
A;Accession: A;Accession: A;Accession: A;Molecule type: protein
A;Residues: 458-498 <HANN
A;Residues: 458-498 <HANN
R;Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, |
J. Biol. Chem. 262, 2768-2779, 1987
J. Biol. Chem. 262, 2768-2779, 1987
A;Title: Bovine high molecular weight kininogen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Note: article in Japanese C; Comment: The HMW kininogen precursor is produced from the same gene as the LMW form C; Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of C; Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is in C; Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator xyproline residue is present in the kininogen prior to the release of bradykinin. C; Superfamily: kininogen; cystatin homology C; Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d
                           F;417-488/Region: glycine/histidine/lysine-rich
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status ex
F;27-591,82-93,106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide
F;87,168,169,204/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental
F;197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F;397/Binding site: carbohydrate (Asn) (covalent) (partial)
F;398-399/Cleavage site: Met-Lys (kallikrein) #status experimental
F;382/Modified site: 4-hydroxyproline (Pro) #status experimental
F;382/Modified site: Arg-Ser (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                             F;141-252/Domain: cystatin homology <CY2>
F;263-374/Domain: cystatin homology <CY3>
F;263-974/Domain: cystatin homology <CY3>
F;379-388/Product: lysyl-bradykinin (kallidin II) #status experimental <BDY>
F;380-388/Product: bradykinin (kallidin I) #status experimental <BDY>
F;389-621/Product: HMW kininogen I light chain #status experimental <LCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eur. J. Biochem. 152, 307-314, 1985
A;Title: The amino acid sequence of the light chain of human high-molecular-mass
A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites
R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
Seikagaku 56, 808, 1984
A;Title: Disulfide bonds in bovine HMW kininogens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-621 < KIP:
A; Cross-references: GB:V01491; GB:K01757;
R; Kato, H.; Nagasawa, S.; Suzuki, T.
J. Biochem. 67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Reference number: A92627; MUID:87137530
A;Accession: A29559
A;Molecule type: protein
A;Residues: 'Z',20-133,'I',125-127,'I',129-378
R;Lottspeich, F.; Kellermann, J.; Henschen, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 378-393 <KATN
R; Han, Y.N.; Komiya, M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Title: Studies on the structure of bovine A;Reference number: A91923; MUID:70180420 A;Accession: A91923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: A single gene for bovine high molecular weight and low A;Reference number: A93317; MUID:84014106
A;Accession: A01281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Bos primigenius taurus (cattle) (c;Datc: 14-Nov-1983 #text_change c;Datc: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change c;Accession: A01281; A91932; A91938; A99559 R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;19-621/Product: HMW prokininogen I *status predicted <MAT>F;19-379/Product: HMW kininogen I heavy chain *status experiF;19-130/Domain: cystatin homology <CY1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: Studies on the primary structure of bovine A;Reference number: A91938; MUID:75170265 A;Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kininogen, HMW I precursor - bovine
N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen
N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;1-18/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Reference number: A94300
A;Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Han, Y.N.; Komiya, M.; Iw
J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tspeich, F.; Kellermann, J.; H
J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      signal sequence #status predicted <SIG>
   site: carbohydrate (Ser)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Henschen, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NID: 9491;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            н
   (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The amino acid sequence, positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Η.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             high-molecular-weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIDN:CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hayashida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          II; prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            molecular weight kini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-Jun-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H.; Miyata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of disulfide bonds
experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PID: 9492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T.; Iwana
                                                                                                                                                                                                                                                                                                     experi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         kini
```

```
RiTheologis, A; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Hulzar, L.
Nature 408, 816-820, 2000
A; Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Roney, T.; Rowley, D.; Sakano, H.
A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A; Title: Sequence and analysis of chromosome l of the plant Arabidopsis.
                                                                                                  A; Map position: 1
C; Superfamily: Ar
                                                                                                                                                                                       A;Cross-references: GB:AE005173; NID:g6751686; PIDN:AAF27669.1; GSPDB:GN00141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
B96635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: The genome sequence of the food-borne pathogen Campylobacter jejuni reveals hyla;Reference number: A81250; MUID:20150912
A;Accession: C81428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R;Parkhill, J.; Wren, B.W.; Mungall, K.; Ketley, J.M.; Churcher, C.; Basham, D. C.W.; Quail, M.; Rajandream, M.A.; Rutherford, K.M.; VanVliet, A.; Whitehead, Nature 403, 665-668, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Campylobacter jejuni
C;Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 31-Mar-2000
C;Accession: C81428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;399,400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) (covalent) **status F;498-499/Cleavage site: Arg-Thr (kallikrein) **status experimental
                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-389 <STO>
                                                                                                                                                                                                                                                                                          A;Reference number: A86141; MUID:21016719 A;Accession: B96635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein T7P1.10 [imported] - Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: GB:AL139074; GB:AL111168; NID:g6967505; PIDN:CAB72599.1; PID:g69676(
A;Experimental source: serotype O2, strain NCTC 11168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-189 < PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  peptidyl-prolyl cis-trans isomerase Cj0115 [imported] - Campylobacter jejuni
                                                                                                                                                                                                                                                                  A;Status: preliminary
                                                                                                ;Superfamily: Arabidopsis thaliana zinc transporter
                                                                                                                                                                      Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 23-Mar-2001;Accession: B96635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;Species: Arabidopsis thaliana (mouse-ear cress)
    Query Match
Best Local Similarity
                                                                                                                                                   Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         166 GHDHHHGHGHG 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        472 GHGHKHGHGHGK 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity hes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                   T7P1.10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 СНКНКНСНСНС 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKHKHGHGHGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   slyD; Cj0115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       91.1%;
91.7%;
    78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 62; DB 2;
Pred. No. 0.026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 72; DB 1;
Pred. No. 0.0029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
  62;
No.
    DB 2;
0.052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1; Length 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Indels
                        Length 389;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 189
                                                                                                ZIP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , D.;
"S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chilli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Barr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NC.
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   οy
```

```
A; Experimental source: strain A3(2) C; Genetics:
                                                                                                                                                                                                           submitted to the EMBL Data A; Reference number: Z21574 A; Accession: T36920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: EMBL:AC005310; NID:g3510247; PID:g3510254
A;Experimental source: cultivar Columbia
A;Experimental source: cultivar Columbia
R;Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fuji
M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; T
euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Rounsley, S.D.; Lin, X.; Kaul, S.; Shea, T.P.; Fujii, C.Y.; Mason, T.M.; Shen, submitted to the EMBL Data Library, September 1998
A;Description: Arabidopsis thaliana chromosome II BAC F19D11 genomic sequence. A;Reference number: 214698
A;Accession: T02681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana. A;Reference number: A84420; MUID:20083487 A;Accession: D84907
                                                                                                                                          A;Cross-references: EMBL:AL096743; PIDN:CAB46407.1;
                                                                                                                                                         A; Residues: 1-490 <SEE>
                                                                                                                                                                            A; Molecule type: DNA
                                                                                                                                                                                             A; Status: preliminary; translated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Gene: At2g46800; F19D11.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:AE002093; NID:g3510254; PIDN:AAC33498.1; GSPDB:GN00139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-398 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   euss, D.; Nierman, W.C.;
Nature 402, 761-768, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-398 < ROU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Loc
Matches
                Query Match
Best Local
 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            position:
                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                      SCOEDB: SCI7.24c
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GНКНКНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GHKHKHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                      GHSHGHGHGHG
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       similarity 81.
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                          D.; Bentley, S.D.;
Data Library, July
                                                                                                                                                                                                                                                                                                                                                                                                                                                     11
                                                                                                                                                                                                                                                                                                                                                                                                                     195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11
                78.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78.5%;
81.8%;
 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
Score 62; DB 2; Pred. No. 0.064; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 62;
Pred. No.
                                                                                                                                                                                             from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                               Parkhill,
1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
0.053;
2
                                                                                                                                          GSPDB:GN00070;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                Length 490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 398;
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Town, C.D.; Fujii, C.Y
E.; Umayam, L.; Tallon,
                                                                                                                                                                                                                                                             B.G.; Rajandream,
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                          SCOEDB: SCI7.24c
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
```

1 GHKHKHGHGHG

```
chorion protein s36 - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
C;Date: 01-Dec-1993 #sequence_revision 01-Dec-1995 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                            Ŷ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Palmiter, R.D.; Findley, S.D.
EMBO J. 14, 639-649, 1995
A;Title: Cloning and functional characterization
A;Reference number: S54302; MUID:95188868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          zinc transport protein ZnT-1 - rat
N;Alternate names: zinc transporter ZnT-1
C;Species: Rattus norvegicus (Norway rat)
C;Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change 05-Nov-1999
C;Accession: S54303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            zinc transporter ZnT-1 - mouse
C;Species: Mus musculus (house mouse)
C;Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change 05-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
 A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-286 <SPR>
                                                     A; Reference number: A; Accession: S07193
                                                                       A; Title: Amplification of the X-linked Drosophila A; Reference number: S07193; MUID: 87246506
                                                                                                          R; Spradling, A.C.; de Cicco, D.V.; Wakimoto, EMBO J. 6, 1045-1053, 1987
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-507 <PAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: S54302;
A; Accession: S54303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Introns:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-503 <PAL>
A;Cross-references: EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBO J. 14, 639-649, 1995
A;Title: Cloning and functional characterization
A;Reference number: S54302; MUID:95188868
A;Accession: S54302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R; Palmiter, R.D.;
                                                                                                                                              C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:U17133; NID:g577842; PIDN:AAA79234.1; PID:g577843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genetics:
                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                            145 GHGHSHGHGHG 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145 GHGHSHGHGHG 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             49
                                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GHKHKHGHGHG 11
                                                                                                                                                                                                                                                                                                                                СНКНКНСНСНС 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             СНДНННСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            203/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conserv
                                                                                                                                               S07193
                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Findley, S.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL:U17132; NID:g577840; PIDN:AAA79233.1; PID:g577841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59
                                                                                                                                                                                                                                                                                                                                                                                     78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 62; DB 2;
Pred. No. 0.066;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                     Score 62; DB 2;
Pred. No. 0.066;
                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                           B.T.; Levine, J.F.; Kalfayan, L.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of
                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D
                                                                                                                                                                                                                                                                                                                                                                                                    Length 507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mammalian zinc transporter that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       zinc transporter that
                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                         requires
                                                                                                                                                                                                                                                                                                                                                                    0;.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                           Cooley
                                                                                         region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
Query Match
Best Local s
Matches s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best
```

```
C; Genetics:
A; Gene: 50
C; Superfamily: )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Note: 18-Gly and 18-His were also C; Superfamily: period clock protein; C; Keywords: egg yolk F; 1, 5/Modified ~ 1.
                                                                            Virology 186, 9-14, 1992
A;Title: Channel catfish virus: a new type
A;Title: Channel catfish virus: a new type
A;Title: Channel catfish virus: a new type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: FlyBase:Cp36
A;Cross-references:
A;Introns: 16/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:X05245; NID:g7725; C;Genetics:
                                                                                                                                                                                                 A; Description: Channel cat
A; Reference number: A36804
A; Accession: F36791
                                                                                                                                                                                                                                 submitted to GenBank, January 1 A:Description: Channel catfish
                                                                                                                                                                                                                                                                                 A; Note: host Ictalur
C; Date: 17-Aug-1992
C; Accession: F36791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biochemistry 28, 6104-6110, 1989
A;Title: A histidine-rich protein from the
A;Reference number: A32473; MUID:89375343
A;Accession: B32473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R; Waite, J.H.; Rice-Ficht, A.C.
Biochemistry 28, 6104-6110, 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               histidine-rich protein C, peptide P-5 - liver fluke (fragment) C;Species: Fasciola hepatica (liver fluke) C;Date: 25-Sep-1989 #sequence_revision 03-May-1994 #text_chang: C;Accession: B32473
                                                    A; Note:
                                                                   A; Contents:
                                                                                                                                  R; Davison, A.J
                                                                                                                                                   A;Cross-references: GB:M75136; NID:g331209; PIDN:AAA88153.1;
                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-670 < DAV>
                                                                                                                                                                                                                                                                     R; Davison, A.J.
                                                                                                                                                                                                                                                                                                                                                   hypothetical protein ORF50 - ictalurid herpesvirus 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein A; Residues: 1-18 <WAI>
                                                                                                                                                                                                                                                                                                                                  Species: ictalurid herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              eywords: egg yolk
,5/Modified site: 3',4'-dihydroxyphenylalanine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27
                                                                                                                                                                                                                                                                                                host Ictalurus punctatus (channel catfish) 17-Aug-1992 #sequence_revision 17-Aug-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 СНКНКНСНСНСК 12
                                                      neither
                                                                                                                                                                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 СНКНКНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                     GHGHGHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GHGHGHGHGHGQ
                                                                   annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9; Conservative
     period
                                                  protein nor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FlyBase:FBgn0000359
   clock protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    75.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77
                                                    nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 2%;
                                                                                                                                                                                                                                                  1992
                                                                                                                                                                                                                                   virus:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 61;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 60; D
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  found; EGF
      EGF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                   Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                03-May-1994 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 No. 0.054;
                                                                                                                                                                                                                                     new
     homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                homology
                                                                                                    of herpesvirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 vitellaria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIDN:CAA28870.1; PID:g7726
                                                                                                                                                                                                                                   type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2;
0.0054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                   of.
                                                      is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Tyr) #status
                                                                                                                                                                                                                                                                                                  #text_change 31-Jan-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 286;
                                                                                                                                                                                                                                   herpesvirus
                                                                                                                                                                                                                                                                                                                                                   (strain auburn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the liver
                                                                                                                                                     PID:g331260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-May-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fluke Fasciola
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

hep

Similarity 9; Conserv

Conservative

0

Score 60; DB 2; Pred. No. 0.17; 0; Mismatches

2;

Indels

0;

Gaps

0;

Length 670;

75.9%; 81.8%;

```
A;Gene: fsh
A;Gene: fsh
A;Gene: fsh
A;Cross-references: FlyBase:FBgn0004656
C;Superfamily: unassigned bromodomain proteins; bromodomain homology
C;Keywords: alternative splicing; transmembrane protein
F;1-2038/Product: female sterile homeotic protein, 205K #status predicted
F;1-1106/Product: female sterile homeotic protein, 110K #status predicted
F;59-116/Domain: bromodomain homology <BRO1>
F;59-116/Domain: bromodomain homology
                                                                                                                                                                                                                                                               C;Accession: S66148
R;Weber, U.; Siegel, V.; Mlodzik, M.
EMBO J. 14, 6247-6257, 1995
A;Title: pipsqueak encodes a novel nuclear protein required downstream of seven-up for A;Reference number: S66148; MUID:96134923
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                   gene pipsqueak protein A short form - fruit fly (Drosophila melanogaster)
C;Species: Drosophila melanogaster
C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
S66148
                                                                                                                A;Gene: pipsqueak
C;Superfamily: PO;
F;21-123/Domain: N
                                                                                                                                                                                      A;Molecule type: DNA
A;Residues: 1-535 <WBB>
A;Cross-references: EMBL:X90986; NID:g1149498; PIDN:CAA62473.1; PID:g1149499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dev. Biol. 134, 246-257, 1989

A;Title: The Drosophila fsh locus, a maternal effect homeotic gene, encodes apparent mem A;Reference number: A43742; MUID:89276730

A;Accession: A43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Species: Drosophila melanogaster
C;Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change 20-Sep-1999
C;Accession: A43742; B43742
R;Haynes, S.R.; Mozer, B.A.; Bhatia-Dey, N.; Dawid, I.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: mRNA
A;Residues: 1-1106 <HA2>
A;Cross-references: EMBL:M23222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             female sterile homeotic protein, 205K – fruit fly (Drosophila melanogaster)
N;Alternate names: membrane protein fsh, 205K
N;Contains: female sterile homeotic protein, 110K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Accession: B43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: EMBL:M23221; NID:g157452; PIDN:AAA28540.1; PID:g157453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-2038 <HAY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    503-560/Domain: bromodomain homology <BRO2>
                           Best Local Similarity
                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genetics:
    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  597 СИСИСИСИСИ 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            636 СИСИСИСИСИС 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GHKHKHGHGHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GHKHKHGHGHG
    8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 81.09; Conservative
                                                                                                            POZ domain homology
n: POZ domain homology
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            75.9%;
81.8%;
                       74.7%;
80.0%;
    1;
                       Score 59; DB 2
Pred. No. 0.19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 60; DB
Pred. No. 0.49
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
    Mismatches
                                                                                                                <P02>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .49;
                                              2;
  ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                           Length 535;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2038;
    Indels
0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <MA2>
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                              Search completed: July Job time: 645 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
```

6,

2001, 09:17:59

```
A;Description: required for establishing polarity of the developing egg chamber C;Superfamily: POZ domain homology F;21-123/Domain: POZ domain homology <POZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Horowitz, H.; Berg, C.A.
Development 122, 1859-1871, 1996
A;Title: The Drosophila pipsqueak gene encodes a nuclear BTB-domain-containing protei A;Reference number: 222972; MUID:96232300
A;Accession: T45461
                                                                                                                                                                                                                                                                                                           C; Function:
                                                                                                                                                                                                                                                                                                                                A; Map position:
A; Introns: 427/3
                                                                                                                                                                                                                                                                                                                                                                                                                                A; Experimental source: tissue type ovarian
                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-355,'E',357-1005,'H',1007-1020,'O',1021-1061,'ERS' <HOR>
A;Cross-references: EMBL:U48358; NID:g1203906; PIDN:AAC47153.1; PID:g1203907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: DNA
A;Residues: 'MQ',428-1085 <WE2>
A;Cross-references: EMBL:X90986; NID:g1149498; PIDN:CAA62475.1; PID:g1149501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-1085 <WEB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Title: pipsqueak encodes a novel nuclear A; Reference number: S66148; MUID: 96134923 A; Accession: S66149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Accession: S66149; S66150; T45461
R;Weber, U.; Siegel, V.; Mlodzik, M.
EMBO J. 14, 6247-6257, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997
C;Accession: S66149; S66150; T45461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: pipsqueak;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: S66150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: EMBL:X90986; NID:g1149498; PIDN:CAA62474.1; PID:g1149500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene pipsqueak protein A long form - fruit fly (Drosophila melanogaster)
                                                                                               Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                334
334 HEHNHGHGHG
                                             2 нкнкненене 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 HKHKHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HEHNHGHGHG
                                                                                               Similarity
8; Conserv
                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                psq
343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             343
                                                                                                                       74.78;
                                                                                                                       Score 59; DB 2; Pred. No. 0.37;
                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein required downstream of seven-up
                                                                                               1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #text_change 01-Dec-2000
                                                                                                                                               Length 1085;
                                                                                                  Indels
                                                                                               0,
                                                                                               Gaps
                                                                                               0,
```

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          욙
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein -
          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           seq
                                                                                                                                                                                                                protein search, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query
Match
       100
9111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
91111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
911
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
911
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
911
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
911
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
911
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
9111
911
9111
9111
9111
9111
9111
9111
9111
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
911
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           July 6, 2001, 09:26:37; Search time 37.59 Seconds (without alignments) 10.936 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-437-912-3
79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
       DВ
KE4_HUMAN
KE4_PIG
KE4_BRARE
KNG_RAT
SLYD_ECOLI
KE4_MOUSE
OVO_DROME
T2D2_DROME
T2D2_DROME
T2D2_DROME
T2D2_DROME
S109_RAT
UREE_ACTPL
LANT2_RAT
HMN2_DROME
CC_DICDI
SC_DICDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAUP_DROME
CH36_DROME
VG50_HSVI1
FSH_DROME
KE41_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KNG_HUMAN
KNH2_BOVIN
KNH1_BOVIN
KNG_MOUSE
S109_RABIT
ZNT1_MOUSE
ZNT1_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       model
P01042 homo sapien
P01045 bos taurus
P01046 bos taurus
P01046 bos taurus
P01047 mus musculu
P50171 oryctolagus
O60738 mus musculu
O62720 rattus norv
P54269 drosophila
P07182 drosophila
Q00130 ictalurid h
P13709 drosophila
Q09175 grosophila
Q09175 sus scrofa
Q99175 sus scrofa
Q99175 sus scrofa
Q99175 sus scrofa
Q99175 sus scrofa
Q99186 escherichia
Q1125 mus musculu
P51521 drosophila
Q24325 drosophila
Q24325 drosophila
P5016 rattus norv
Q54422 actinobacil
Q62941 rattus norv
Q54423 drosophila
P15648 dictyosteli
Q07046 aeromonas
P26410 rhodobacter
Q9v3a4 drosophila
P1302 drosophila
P1302 drosophila
P3043 caenorhabdi
Q09463 caenorhabdi
Q09463 caenorhabdi
Q09463 caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
```

	00000000000000000000000000000000000000
	4 5 5 4 4 4 4 4 4 4 4 4 4 4 4 4 6 6 6 6
	5588558888
	439 536 537 1133 1133 1462 606 85 85 85 381 381
ALIGNMENTS	COT1_YEAST LACL_THACU SNF1_YEAST S109_MOUSE GCP_STRCO HEMO_HUMAN GAB_DROME ANTF_SARPE NB2M_HUMAN HRPX_PLALO SELP_HUMAN HYPB_BRAJA
	P32798 saccharomyc P56193 thanatephor P06782 saccharomyc P31725 mus musculu 086793 streptomyce P32790 homo sapien P25123 drosophila 008617 sarcophaga 043676 homo sapien P49908 homo sapien P49908 homo sapien Q45257 bradyrhizob

RP RA RA RA RA RA RA RA RA RA RA RA RA RA	RR RR RR RR RR RR RR RR RR RR RR RR RR	RES OC OC OC OC OC OC OC OC OC OC OC OC OC
SEQUENCE OF 381-389.  MEDLINE-90255622; PubMed-4952632;  Pierce J.V.;  Structural features of plasma kinins and kininogens.";  Fed. Proc. 27:52-57(1968).  [6]  DISULFIDE BONDS.  Sueyoshi T., Miyata T., Kato H., Iwanaga S.;  "Disulfide bonds in bovine HMW kininogens.";	SEQUENCE FROM N.A. (ISOFORMS HAW AND LAW).  TISSUB-Liver;  MEDLINE-85234582; PubMed-2989293;  Takagaki Y., Kitamura N., Nakanishi S.;  "Cloning and sequence analysis of cDNAs for human high molecular weight and low molecular weight prekininogens. Primary structures of two human prekininogens.";  J. Biol. Chem. 260:8601-8609(1985).  [2]  GENE STRUCTURE.  MEDLINE-85234583; PubMed-2989294;  Kitamura N., Kitagawa H., Fukushima D., Takagaki Y., Miyata T.,  Nakanishi S.;  "Structural organization of the human kininogen gene and a model for its evolution.";  J. Biol. Chem. 260:8610-8617(1985).  [3]  SEQUENCE OF 1-401 FROM N.A.  MEDLINE-85122621; PubMed-6441591;  Ohkubo I., Kurachi K., Takasawa T., Shiokawa H., Sasaki M.;  "Isolation of a human cDNA for alpha 2-thiol proteinase inhibitor and its identity with low molecular weight kininogen.";  Biochemistry 23:5691-5697(1984).  SEQUENCE OF 379-644.  MEDLINE-86030270; PubMed-4054110;  Lottspeich F., Kellermann J., Henschen A., Foertsch B.,  Mueller-Esterl W.;  "The amino acid sequence of the light chain of human high-molecular-mass kininogen.";  Bur. J. Biochem. 152:307-314(1985).	RESULT 1  KNG_HUMAN  TO KNG_HUMAN  NOT 10 KNG_HUMAN  RNG_HUMAN  AC P01042; P01043;  DT 21-UL-1986 (Rel. 01, Created)  DT 01-FEB-1996 (Rel. 33, Last sequence update)  DT 01-OCT-2000 (Rel. 40, Last annotation update)  DT 01-OCT-2000 (Rel. 40, Last annotation update)  DE KININOGEN PRECURSOR (ALPHA-2-THIOL PROTEINASE INHIBITOR) [CONTAINS:  DE BRADYKININ].  DE BRADYKININ].  OS HOMO Sapiens (Human).  OS Homo sapiens (Human).  OC EUKaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  NORL_TaxID=9606;

```
TITITE WAN ARREST REPRESENTATION OF THE TITITES OF THE TOTAL PROPERTY OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITITES OF THE TITI
                                                                                                                                                                                                                                                                                                                                                                    EMBL; K02566; A
EMBL; M11438; A
EMBL; M11521; A
EMBL; M11521; A
EMBL; M11523; A
EMBL; M11524; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11527; A
EMBL; M11528; A
EMBL; M11521; A
EMBL; M11521; A
EMBL; M11521; A
EMBL; M11521; A
EMBL; M11522; A
EMBL; M11522; A
EMBL; M11523; A
EMBL; M11523; A
EMBL; M11523; A
EMBL; M11523; A
EMBL; M11523; A
EMBL; M11524; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M11526; A
EMBL; M1526; A
EMBL; M1526; A
EMBL; M1526; A
EMBL; M1526; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528; A
EMBL; M1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities re
or send an
                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This
                                                                                                                              Glycoprotein; Plas
Bradykinin; Blood
                                                                                                                                                                                  Pfam; PF00031; cystatin; 3. PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                      MIM; 228960;
                                                                                                                                                                                                                                                                                                                                           SWISS-2DPAGE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <del>-</del> + +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seikagaku
                                                                                                         Alternative
                                                                                                                                                                                                                                                                InterPro; IPR000010; -. InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HAW (SHOWN H PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAND A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION); INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELEAXING FACTOR ACTION); (5) LAW-KININOGEN IS IN CONTRAST TO HAW-KININOGEN NOT INVOLVED IN BLOOD RELEATED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2) HMW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND EACTOR XI REXT TO FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56:808-808(1984)
  19
19
381
                                                                                                      splicing
                                                                                                                                                                                                                                                                                                                                           KGHUL1.
B25276.
S02482.
F01043;
                                                                                                                      0287; CYSTATIN; 2.
; Plasma; Repeat; T
Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                       KGHUH1.
A25276.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AABS9550.1
AABS9550.1
AABS9550.1
AABS9550.1
AABS9551.1
AABS9551.1
AABS9551.1
AABS9551.1
AABS9551.1
AABS9551.1
AABS9551.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB59551.
AAB59551.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB59550.
AAB59550.
AAB59550.
AAB59550.
AAB59550.
AAB59550.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA35497.1;
  18
644
380
389
                                                                                                                                                                                                                                                                                                                                                 HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
KININOGEN.
KININOGEN HEAVY CHAIN
BRADYKININ.
                                                                                                                              Thiol protease; Inflammatory r
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no restrictions ong as its content is in
                                                                                                                                 response;
                                                                                                                                                            inhibitor; Vasodilator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HERE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLASMA KALLIKREIN
                                                                                                                                 Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELEASE OF
(4F) IT HAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LMW.
  Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Qγ
```

```
KNH2_BOVIN
                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                   21-JUL-1986 (Rel. (21-JUL-1986 (Rel. (21-JUL-1986 (Rel. (21-CT-2000 (Rel. (KININOGEN, HMW II )
                                                                                                                                                                                                          KNH2_BOVIN
P01045;
                                                                                                                                                                                                                                                                                                                                                     VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
REPEAT
REPEAT
MOD_RES
DISULFID
                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pec
Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
DOMAIN
DOMAIN
                                                MEDLINE-84014106; PubMed-6571699;
Kitcamura N., Takagaki Y., Furuto S., Tanaka T., Nawa H.,
"A single gene for bovine high molecular weight and low π
weight kininogens.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
  Sueyoshi T., Miyata T., Hashimoto N., Kato H., Hayashida
           SEQUENCE OF 19-376.
MEDLINE=87137530; E
                                                                                       SEQUENCE FROM N.A.
                                                                                                        NCBI_TaxID=9913;
                                                                                                                                                  Bos taurus (Bovine).
                                                                                                                                                           BRADYKININ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                        Nature 305:545-549(1983).
                                                                                                                                                                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                  494 GHKHKHGHGHGK 505
                                                                                                                                                                                                                                                                                     1 СНКНКНСНСНСК
                                                                                                                                                                                                                                                                                                       l Similarity
12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                      ΑĄ;
                                                                                                                                                                                                                    STANDARD;
           PubMed=3546295;
                                                                                                                                                                 01, Created)
01, Last sequence update)
40, Last annotation update)
PRECURSOR (THIOL PROTEINASE
                                                                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                                                     644
593
71945
                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                      WW;
                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KININOGEN LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
HIS-RICH (ASSOCIATED WI
ACTIVITY)
                                                                                                                                                                                                                                                                                                                                                    VSPPHTSMAPAQDEERDSGKEQGHTR ->
PPKAGAEPASEREVS (IN ISOFORM LAW).
MISSING (IN ISOFORM LAW).
T -> I (IN REF. 1).
7 -> I (IN REF. CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                      Score 79; DB 1;
Pred. No. 9.9e-05;
Pred. No. 9.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                    619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GLCNAC.)
(GLCNAC.)
(GLCNAC.)
                                                                                                                                                                                                                    Ā
                                                                                                                                                                    INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                                                                                                                        Length 644;
                                                                                                                            Pecora;
                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WITH CLOTTING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                       Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACID
                                                           molecular
Ξ.
                                                                    Nakanishi S.;
                                                                                                                              Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                  LMW).
                                                                                                                                                                                                                                                                                                                                                                                            SHLRSCEYKGR
                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                       0;
```

Ţ,

```
EMBL; V01492; CAA24736.1;
EMBL; V01492; CAA24737.1; I
PIR; A01282; KGBOH2.
PIR; B29559; B29559.
HSSP; P04129; 1AFI.
                                                                                                                                                                                                                                                                                                                                                                                                  This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HAW-KININGEN LAYS AN INHIBITORS OF THIOL PROTEASES; (2)
HAW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMM-KININGEN INHIBITS THE THROMBIN- AND
PLASMIN-INDUCED AGGRECATION OF THROMBOLYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HMM-KININGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIORESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLICOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4EI) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDIS),
(4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Miyata T., Iwanaga S.; "Bovine high molecular weight kininogen. The amino acid sequence, reattions of carbohydrate chains and disulfide bridges in the hea
                  Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation; Signal;
                                                     InterPro; IPR000010; -.
InterPro; IPR002395; -.
Prom; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                            or send
                                                                                                                                                                                                                                                                                                                   modified
                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Studies on the primary structure of bovine high-molecular-weight kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Blochem. 77:55-68(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 456-496
MEDLINE=75170265; PI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIINE=76260155; PubMed=956151;
Han Y.N., Kato H., Twanaga S., Suzuki T.;
"Primary structure of bovine plasma high-molecular-weight kininogen.
"Be amino acid sequence of a glycopeptide portion (fragment 1)
following the C-terminus of the bradykinin moiety.";
J. Blochem. 79:1201-1222(1976).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen: cleavages of disulfide bonds and of methionyl bonds in kininogen-II.";
J. Biochem. 67:313-323(1970).
                                                                                                                                                                                                                                                                                                 entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 387-455.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 376-391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=70180420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biol.
                                                                                                                                                                                                                                                                                                                              s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - Buropean Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                 TO RESIDUE 398.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALTERNATIVE PRODUCTS: HWW II AND LWW II KININOGEN PRECURSORS PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JINE=75170265; PubMed=1169237;
Y.N., Komiya M., Iwanaga S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: EXTRACELLULAR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTION,
                                                                                                                                                                                                                                                                            an
                                                                                                                                                                                                                                                                        non-profit institutions as long a and this statement is not removed. requires a license agreement (See lan email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70180420; PubMed=4986212; Nagasawa S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            262:2768-2779(1987)
                                                                                                                                                                                                                ALT_SEQ.
                                                                                                                                                                                                                                                                                           agreement (See http://www.isb-sib.ch/announce/
              coagulation;
                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                 Ьy
                                                                                                                                                                                                                                                                                                                   and
            Signal;
                                                                                                                                                                                                                                                                                                                   for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     heavy
                                                                                                                                                                                                                                                                                                                   commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARE
```

```
RESULT 3
KNH1_BOVIN
                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                       Query Match 91.7
Best Local Similarity 91.7
Matches 11; Conservative
                                                                                                                                                                                DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIGNAL
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
SEQUENCE OF 378-393.
MEDLINE=70180420; PubMed=4986212;
                     J. Biol.
                                                Sueyoshi T., Miyata T.,
Miyata T., Iwanaga S.;
                                                              SEQUENCE OF 19-378.
MEDLINE=87137530; F
                                                                                                                SEQUENCE FROM N.A. MEDLINE-84014106; PubMed=6571699;
                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                             KNH1_BOVIN
P01044;
                                                                                                                                                                                                                                                                                                                                                                                DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                            chain
                                   positions of carbohydrate
                                          Miyata T., Iwanaga S.;
"Bovine high molecular weight kininogen. The amino acid sequence,
                                                                                    Nature 305:545-549(1983).
                                                                                            weight kininogens."
                                                                                                         Kitamura N., Takagaki Y.,
                                                                                                                                     NCBI_TaxID=9913;
                                                                                                                                              Bovidae;
                                                                                                                                                                  Bos taurus
                                                                                                                                                                          BRADYKININ]
                                                                                                                                                                                                                                                                                                                                     VARIANT
                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                        DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEPTIDE
                                                                                                   *A single gene for bovine
                                                                                                                                                                                                                                                         470
                                                                                                                                                                                                                                                                 GHKHKHGHGHGK 12
                                                                                                                                                                                                                                                         СИСНКИСИСИСК 481
                     Chem.
                                                                                                                                              Bovinae;
                                                                                                                                                                   (Bovine).
                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                 29, Last annotation update)
PRECURSOR (THIOL PROTEINASE INHIBITOR) [CONTAINS:
                                                                                                                                              Bos.
                                                                PubMed=3546295;
                                                                                                                                                                                       01, Created)
01, Last sequence
29, Last annotatic
                                                                                                                                                                                                                                                                                                                                           19
87
136
1197
204
204
200
400
589
589
93
125
125
144
144
144
144
144
1337
337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18
619
376
386
619
619
135
256
                                                                                                                                                                                                                                                                                                                      68710
                                                                                                                                                                                                                                                                                          91.1%;
91.7%;
                     -2779(1987).
                                                       Hashimoto
                                                                                                 Furuto S., Tanaka T., high molecular weight
                                                                                                                                                                                                                                                                                                                      ₩,
                                   chains and
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC A
N-LINKED (GLCNAC. . .).
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                             # 17 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                           INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KININOGEN,
                                                                                                                                                                                                                                                                                                                     -> P.
-> V.
-> K.
F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                                    Mismatches
                                                        N.
                                                                                                                                                                                               update)
                                  disulfide bridges in the heavy
                                                                                                                                                                                                                     621
                                                        Kato H., Hayashida
                                                                                                                                                                                                                                                                                          DB 1;
0.001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MMH
                                                                                                                                                                                                                     Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      II.
                                                                                                                                                                                                                                                                                                Length 619;
                                                                                                  Nawa
and 1
                                                                                                                                                                                                                                                                                                                                                                                                                                .) (PARTIAL).
                                                                                                                                                                                                                                                                                    Indels
                                                                                                   Low
                                                                                                                                                           Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACID.
                                                                                                         Η.,
                                                                                                   molecular
                                                        н.,
                                                                                                                                                     Bovoidea;
                                                                                                         Nakanishi
                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                    Gaps
                                                                                                         S
                                                                                                                                                                                                                                                                                    0
```

```
THE TENT OF THE TENT TO BE A READED TO BE A READED TO COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR COLOR 
  DISULFID DISULFID
                                             DISULFID DISULFID
                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                           CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                         CHAIN
PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kato H.,
"Studies
                                                                                                                                                                                                                                                         DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This
                                                                                                                                          CARBOHYD
                                                                                                                                                                                                           MOD_RES
                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                     Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; A01281; KGBOH1.
PIR; A29559; A29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; V01491; CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -i- function: (1) Kininogens are inhibitors of thiol proteases; (2) HMW-Kininogen plays an important role in blood coagulation by Helping to position optimally prekallikerin and factor xi next to factor xii; (3) HMW-Kininogen inhibits the thrombin- and plasmin-induced aggregation of thrombocytes; (4) the active pertide bradykinin that is released from HMW-Kininogen shows a variety of physiological effects: (4a) influence in smooth muscle contraction, (4b) induction of hypotension, (4c) natridresis and didresis, (4d) decrease in blood glucose level, (4e) it is a mediator of inflammation and causes (4e1) increase in vascular permeability, (4e2) stimulation of nociceptors (4e3) release of other mediators of inflammation (e.g. prostaglandins), (4f) it has a cardioprotective effect (directly via bradykinin action).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kınınogen. Amino acid sequence of a fragme peptide') released by plasma kallikrein.", J. Biochem. 77:55-68(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Han Y.N., Komiya M., Iwanaga S., Suzuki T., "Studies on the primary structure of bovine kiningen. Amino acid sequence of a fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bonds
                                                                                                                                                                                                                                                                                                      CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF00031; cystatin; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 458-498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochem. 67:313-323(1970)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW I AND LAW I KININOGEN PRECURSORS ARE PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TO RESIDUE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTION)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            non-profit institutions as long and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JE SPECIFICITY: PLASMA.

BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nagasawa S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of methionyl bonds
19
389
389
19
19
136
258
87
136
168
168
197
204
106
                                                                                                                                                                                                                                                                                                                                                                                                                response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=1169237;
  19
136
168
197
204
591
125
                                                                                                                                                                                                                            621
378
388
621
135
257
378
                                                                                                                                                                                                                                                                                                                                                                                                             Signal
                                                                                                                                                                                                                          BRADYKININ.
LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
                                                                N-LINKED (GLCNAC. . .) (PARTIAL)
N-LINKED (GLCNAC. . .).
INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T.;
                                                                                                                                        OR 169
                                                                                                                                                              PARTIAL.
                                                                                                                                                                                   N-LINKED (GLCNAC.
                                                                                                                                                                                                           PYRROLIDONE
                                                                                                                                                                                                                                                                                                                                               HEAVY CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bovine kininogen: cleavages of disulfide
in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                       MME
                                                                                                                                                                                                         CARBOXYLIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           high-molecular-weight t ('histidine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 way
```

```
RESULT 4
KNG_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                     RL SUBMITTED GET.

RL SUBMITTED (A.)

CC -!- FUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

CC -!- FUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

CC -!- FUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)

CC HELPING TO POSITION OPTHALLY PREKALLIKEIN AND FACTOR XI NEXT TO

CC HELPING TO POSITION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE

CC INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE

CC INDICED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE

CC PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH MUSCLE

CC CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND

CC CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND

CC DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A

MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR

CC PERMEABILITY, (4E2) STIMULATION OF NCCICEPTORS (4E3) RELEASE OF

CC OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS

CC INDIRECTLY VIA EMDOTHELIUM DERIVED RELAXING FACTION); (5)

CC INDIRECTLY VIA EMDOTHELIUM DERIVED RELAXING FACTOR ACTION); (5)

CC KININGEN IS IN CONTRAST TO HMW-KININGEN NOT INVOLVED IN BLOOD

CC CLOTTING (BY SIMILARITY).

CC -!- SUBCELLULAR LOCATION: SECRETED.

CC -I- SUBCELLULAR LOCATION: SECRETED.

CC -I- SUBCELLULAR LOCATION: SECRETED.

CC -I- TITSCHE SEPACTION OF SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 11; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KNG_MOUSE STAN

008677; 008676;

01-0CT-2000 (Rel. 4

01-0CT-2000 (Rel. 4

01-0CT-2000 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                   This
              EMBL; D84435; BAA
EMBL; D84415; BAA
MGD; MGI:1097705;
                                                                           or send
                                                                                           entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=C57BL/6 x CBA; TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kininogen.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Takano M., Kondoh J., Yayama
"Molecular cloning of cDNAs i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GHKHKHGHGHGK 12
                                                                                                                                                                                           PTM: BRADYKININ IS RELEASED FROM KININOGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                   European Bioinformatics Institute.
                                                                                                                                                                                                                                 TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                   SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHGHKHGHGHGK 483
                                                                           an
                                                                                        and this statement is not removed. requires a license agreement (See
                                                                           email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       205
228
263
327
350
621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                            BAA19742.1;
                                         BAA19743.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ΑĄ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40, Created)
40, Last sequence
40, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (ISOFORMS HMW AND LMW).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         217
247
266
339
369
                                                                                                                        institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91.1%;
91.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for mouse low- a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 72;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D16850BEFE3C55CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
0.001;
                                                                                                                                   There are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                        http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        and high- molecular
                                                                                                        Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 621;
                                                                                                                                      no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                PLASMA KALLIKREIN
                                                                                                        bу
                                                                                                                                    restrictions
                                                                                                         and
                                                                                                                                                      EMBL
                                                                                                                                                      a collaboration -
                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                        commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                        on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
S109
 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                         S109_RABIT
P50117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARSPLIC
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
CHAIN
SEQUENCE OF 45-82 FROM STRAIN-NEW ZEALAND WHIT MEDLINE-94198229; PubMe
                                                                       "Rabbit polymorphonuclear neutrophils form
calgranuln C when incubated with inorganic
J. Biol. Chem. 271:19802-19809(1996).
                                                                                                                         STRAIN-NEW ZEALAND WHITE; TISSUE-Neutrophils; MEDLINE-96355278; PubMed-8702688; Yang Z., de Veer M.J., Gardiner E.E., Devenis Underwood J.R., Robinson H.C.;
                                                                                                                                                                                                                                                         Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                     S100A9 OR MRP-14.
                                                                                                                                                                                                                                                                                                                                                  01-OCT-1996 (Rel. 34, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
CALGRANULIN B (MIGRATION INHIBITORY FACTOR-RELATED PROTEIN 14)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bradykinin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Glycoprotein; Plasma; Repeat;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00031; cystatin; 3. PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR003243; -. Pfam; PF00031; cystatin;
                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Alternative
                                                                                                                                                                                                                                          NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              514 СИСИСИСИСИСК
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHКНКНGНGНGК 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     l Similarity
10; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR002395; -. IPR003243; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                433
661 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         389
389
19
136
258
439
83
107
1141
205
228
228
238
263
3327
350
401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blood coagulation; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              525
 PubMed=8148323;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
73102
                   WHITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     82.3%;
                                  N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INTERCHAIN (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYSTATIN-LIKE
CYSTATIN-LIKE
CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 65;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MISSING (IN ISOFORM LMW).
774460258D58796E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HIS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CEYKGRLSKAGAEPAPERQAESSQVKQ (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KININOGEN LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KININOGEN HEAVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Thiol protease inhibitor; Vasodilator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                       inorganic [35S]sulfate.";
                                                                                                                                                                                                                                                                                                                                                                                                                                               118
                                                                                                                                             Devenish R.J., Handley C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₿
                                                                                                              35S-labeled S-sulfo-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 661;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RESULT 6
  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZNT1_MOUSE
Q60738;
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
REPEAT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Dynamic changes in mRNA expression of neutrophils during of acute inflammation in rabbits.";
Int. Immunol. 6:149-156(1994).
-!- SIMILARITY: BELONGS TO THE S-100 FAMILY.
-!- SIMILARITY: CONTAINS 2 EF-HAND CALCIUM-BINDING DOMAINS
                                      transporter that confers resistance to zinc.";
EMBO J. 14:639-649(1995).

-!- FUNCTION: MAY BE INVOLVED IN ZINC TRANSPORT OUT OF
LETHALITY OF KNOCKOUT EARLY IN GESTATION SUGGESTS
PROTEIN IN FETAL ZINC ACQUISITION AND RETENTION.
-!- SUBUNIT: MULTIMER (PROBABLE).
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
                                                                                                                                                                      Palmiter R.D., Findley S.D.;
Palmiter R.D., Findley S.D.;
"Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization" ("Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization" ("Cloning and functional characterization of a mammalian zinc "Cloning and functional characterization" ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional characterization") ("Cloning and functional cha
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAY-2000 (Rel.
30-MAY-2000 (Rel.
01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                        TISSUE=Brain;
MEDLINE=95188868;
                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                           SLC30A1 OR ZNT1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZINC TRANSPORTER 1 (ZNT-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00018; EF_HAND; 1. PROSITE; PS00303; S100_CABP; Calcium-binding; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01023; S_100; 1 Pfam; PF00036; efhand;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AF091849; AAC61771.1; EMBL; D17404; BAA04227.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mori S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      105 GHGHSHGHGHG 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GHKHKHGHGHG
LOCALIZED ON THE PLASMA MEMBRANE TISSUE SPECIFICITY: WIDELY EXPRES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PR00334; KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR001751; -. IPR002048; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPR002395; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               103
111
118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
53
103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 39, Created)
. 39, Last sequence 40, Last annotations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11
                                                                                                                                                                                                                                                           PubMed=7882967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Goto F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22
64
118
                                                                                                                                                                                                                                                                                                                                                                                           Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mutakami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITE I (LOW AFFINITY) (POTENTIAL).
SITE II (HIGH AFFINITY) (POTENTIAL).
2 X 8 AA TANDEM REPEATS OF G-H-G-H-G-H-S-H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 62; DB 1;
Pred. No. 0.0057;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۲.
                                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7496118E21AD5C41 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      K., Ohkawara S., Yoshinaga M.;
of neutrophils during the course
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                        (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     503 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                         QF
                                                                                                                 A ROLE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                   THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
SEQUENCE
         McMahon R.J., Cousins R.J.;

"Regulation of the zinc transporter ZnT-1 by dietary zinc.";

Proc. Natl. Acad. Sci. U.S.A. 95:4841-4846(1998).

-!- FUNCTION: MAY BE INVOLVED IN ZINC TRANSPORT OUT OF THE C

-!- SUBUNIT: MULTIMER (PROBABLE).
                                                                  TISSUE=Intestine;
MEDLINE=98226729; PubMed=9560190;
                                                                                                                      EMBO
                                                                                                                            "Cloning and functional characterization of a mammalian transporter that confers resistance to zinc.";
                                                                                                                                                                   TISSUE=Kidney;
MEDLINE=95188868;
                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                  SLC30A1 OR ZNT1.
                                                                                                                                                                                                                                                                            30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence up
01-CCT-2000 (Rel. 40, Last annotation
ZINC TRANSPORTER 1 (ZNT-1).
                                                                                                                                                                                                                                                                                                                              Q62720
                                                                                                                                                                                                                                                                                                                                                      RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                   NCBI_TaxID=10116;
                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                         ZNT1_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                       Palmiter R.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U17132; AAA79233.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                   145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                             NDUCTION BY ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                        1 СНКНКНСНСНС 11
 SUBCELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: BELONGS TO THE SLC30A FAMILY OF TRANSPORTERS
                                                                                                                                                                                                                                                                                                                                                                                                   GHGHSHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MGI:1345281;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PF01545; Cation_efflux;
                                                                                                                    14:639-649(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
9; Conserv
                                                                                                                                                                                           FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002524; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         503
                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1100
1114
135
244
265
304
325
                                                                                                                                                        Findley S.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                         STANDARD;
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                   155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transmembrane; Multigene family; Repeat.
                                                                                                                                                                   PubMed=7882967;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S1c30a1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
31
35
56
78
99
113
113
243
2643
2563
2563
294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54716
                                                                                                                                                                                                                                                                                                                                                                                                                                                           78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW;
INTEGRAL MEMBRANE PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 62; DB Pred. No. 0.02 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC (POTENTIAL).

6 X 2 AA APPROXIMATE REPEATS OF H-G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LINKED (GLCNAC. . .) (P7C4FF93FC13CDA22 CRC64;
                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                         507
                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1;
0.024;
                                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 503
                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL)
                      THE CELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

-1

```
CAUP_DROME
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                              P54269;
01-OCT-1996 (Rel. :
01-OCT-1996 (Rel. :
01-OCT-2000 (Rel. :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
TRANSMEM
                                                 encode homeoproteins that control Cell 85:95-110(1996).
-!- FUNCTION: CONTROLS PRONEURAL A
                                                                                                   Gomez-Skarmeta J.-L., del Cor
Ferres-Marco D., Modolell J.;
                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                    CAUP.
                                                                                                                                                                                                                                                                                                                  CAUP_DROME
                                                                      "Araucan and caupolican, two members of the novel iroquois complex encode homeoproteins that control proneural and veln-forming genes
                                                                                                                             MEDLINE=96180722;
                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                Ephydroidea;
                                                                                                                                                                                             Pterygota; Neoptera;
                                                                                                                                                                                                                                                  HOMEOBOX PROTEIN CAUPOLICAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01545; Cation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Ew the European Bioinformatics Institute. There are no restructed by non-profit institutions as long as its content use by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U17133; AAA79234.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                  145 GHGHSHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                          1 GHKHKHGHGHG
         FUNCTION: CONTROLS PRONEURAL AND VEIN FORMING GENES. POST:
TRANSCRIPTIONAL CONTROLER OF AC-SC (ACHAETES COUTE). MAX AX
ACTIVATOR THAT INTERACTS WITH THE TRANSCRIPTIONAL COMPLEX
ASSEMBLED ON THE AC AND SC PROMOTERS AND PARTICIPATES IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCALIZED ON THE PLASMA MEMBRANE (PROBABLE). LOCALIZED ON THE BASOLATERAL SURFACE OF THE ENTEROCYTES.
TISSUE SPECIFICITY: WIDELY EXPRESSED. THE PROTEIN IS DETECTED DUODENUM AND JEJUNUM BUT NOT IN ILEUM AND COLON.
INDUCTION: SLIGHTLY BY ZINC IN THE INTESTINE, BUT NOT THE LIVE SIMILARITY: BELONGS TO THE SLC30A FAMILY OF TRANSPORTERS.
                                                                                                                                                                                                                                                                                                                                                                                                                                    similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                               Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cation_efflux;
                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                  155
                                                                                                                                                                                                                                                                                                                                                                                                          11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane; Multigene
                                                                                                                                                                                                                                                           34, Created)
34, Last sequence up
40, Last annotation
                                                                                                                             PubMed=8620542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         113
113
134
247
268
307
507
156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   55142
                                                                                                                                                                                                                                                                                                                                                                                                                                              78.5%;
81.8%;
                                                                                                                                                                                             Endopterygota; Diptera; Brachycera;
                                                                                                                Corral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ¥.
                                                                                                                                                                                Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 62; DB
Pred. No. 0.02
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELLULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X 2 AA APPROXIMATE REPEATS OF H-G.-LINKED (GLCNAC. . .) (POTENTIAL). 9F9770017C2455FC CRC64;
                                                                                                               R.D.,
                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                   693
                                                                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (See http://www.isb-sib.ch/announce/
                                                                                                               de la
                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
0.024;
                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           family; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                Calle-Mustienes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 507;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                             Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THE LIVER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a collaboration - MBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  for
                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                        genes.";
                                                                                                               E3
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  'n
                                   AS
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     n no way
                                    Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
Вþ
                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                          01-APR-1988 (Rel. 07, C
01-APR-1988 (Rel. 07, L
01-NOV-1990 (Rel. 16, L
CHORION PROTEIN S36.
CP36 OR S36.
                                                                                                                                                                                                                                                                                 CH36_DROME
P07182;
01-APR-1988
01-APR-1988
01-NOV-1990
                                                                                                                                                                                                                                                                                                                                     DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the
           PIR;
                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                        Spradling A.C., de Cicco D.V., Wakimoto B.T., Levine J.r., Kalfayan L.J., Cooley L.; Kalfayan b.J., Cooley L.; "Amplification of the Tinked Drosophila chorion gene cluster "Amplification of the Tinked Drosophila chorion gene "."
                                                                                                                                                                MEDLINE 87246506; PubMed-3036489; Spradling A.C., de Cicco D.V., Wakimoto B.T.,
                                                                                                                                                                                                                                      Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                    EMBL; X05245; CAA28870.1;
                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                    Pterygota; Neoptera; Endopterygota; Diptera; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Developmental protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transcription regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS00027; HOMEOBOX_1; PROSITE; PS50071; HOMEOBOX_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF00046; homeobox; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FlyBase; FBgn0015919;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; X95178; CAA64485.1; ~. HSSP; P02833; 1SAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                               649
                                                                                                                                                                                                                                                                                                                                                                                                 1 СНКНКНСНСНС
                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: NUCLEAR (PROBABLE).
SIMILARITY: BELONGS TO THE TALE/IRO FAMILY OF HOMEOBOX PROTEINS.
           S07193;
                                                                                                                                                                                                                                                                                                                                                                              GHGHSHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                         s requires a license agreement (See http://www.isb-sib.
an email to license@isb-sib.ch).
                                                                                                                          s a region upstream from 6:1045-1053(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                      similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            non-profit institutions as long as its content is in and this statement is not removed. Usage by and for compreguires a license account.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR001356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   226
300
405
501
517
565
613
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A,
                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                                                                                                                                                                                                                                                                                                                             659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                78.5%;
81.8%;
                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        caup
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA-binding; Homeobox; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 62; DB 1;
Pred. No. 0.032;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POLY-GLN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HOMEOBOX
POLY-ASP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POLY-SER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POLY-HIS
                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8E0D6D43C9CDC619 CRC64;
                                                                                                                                  the s38 chorion gene.";
                                                                                                                                                                                                                                                                                                                          286
                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TALE-TYPE).
                                                                                                                                                                                                                                                                                                                         A
                                                                                                                                                                                                                               Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 693;
                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     for commercial
                                                    .ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wdy
                                                                                                                                                                                                                                                                                                                                                                                                                    0
 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
```

```
SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
VG50_HSVI1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VG50_HSVI1
Q00130;
01-DEC-1992
01-DEC-1992
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chorion.
SEQUENCE
            REPEAT
REPEAT
REPEAT
REPEAT
REPEAT
                                                                          REPEAT
REPEAT
REPEAT
REPEAT
                                                                                                                              REPEAT
REPEAT
                                                                                                                                                            REPEAT
REPEAT
                                                                                                                                                                                                       REPEAT
REPEAT
                                                                                                                                                                                                                                       REPEAT
REPEAT
                                                                                                                                                                                                                                                                     REPEAT
REPEAT
                                                                                                                                                                                                                                                                                          Hypothetical REPEAT
                                                                                                                                                                                                                                                                                                                                                                              the European Bioinformatics Institute. Thuse by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. STRAIN=AUBURN 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Viruses; dsDNA viruses,
                                                                                                                     REPEAT
                                                                                                                                                    REPEAT
                                                                                                                                                                                    REPEAT
                                                                                                                                                                                              REPEAT
                                                                                                                                                                                                                              REPEAT
                                                                                                                                                                                                                                                            REPEAT
                                                                                                                                                                                                                                                                                                                EMBL; M75136; AAA88153.1; -.
PIR; F36791; F36791.
                                                                                                                                                                                                                                                                                                                                              or send
                                                                                                                                                                                                                                                                                                                                                        entities requires a
                                                                                                                                                                                                                                                                                                                                                                    modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                   Virology 186:9-14(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=92087490;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-AUBURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unclassified Herpesviridae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ictalurid herpesvirus 1 (Channel catfish virus) (CCV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYPOTHETICAL GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GHKHKHGHGHGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHGHGHGHGQ
                                                                                                                                                                                                                                                                                                                                             s requires a license agreement (See http://www.isb-sib.ch/announce an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             catfish virus: a new type of herpesvirus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            286 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                     protein;
  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=1727613;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24, Last sequence update) 34, Last annotation updat 50 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30080 MW;
  64174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                77.2%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                     Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   no RNA stage; Herpesviridae;
  MW.
           Score 61; D
Pred. No. 0.
                                                                                                                                                                                                        987654321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29B7CC12E11F1833 CRC64;
2B64A781C519E8B4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        670 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                             There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .019;
                                                                                                                                                                                                                                                                                                                                                                     Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                     bγ
                                                                                                                                                                                                                                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                     commercial
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                              no
                                                                                                                                                                                                                                                                                                                                                                              way
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 11 FSH_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 9
           TRANSMEM
TRANSMEM
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FSH_DROME STANDARD;
F13709; F13710;
O1-JAN-1990 (Rel. 13, Created)
O1-JAN-1990 (Rel. 13, Last seq
O1-OCT-1996 (Rel. 34, Last ann
                                                                                                    TRANSMEM TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                               HSSP: P04002; 1WFA.
F1yBase: FBgn0004656; fs(1)h.
InterPro: IPR001487; -.
Pfam: PF00439; bromodomain: 2.
                                                                                                                                                                                                                                                             EMBL; M23221; AAA28540.1; -.
EMBL; M23222; AAA28541.1; ALT_TERM.
EMBL; M15762; AAA70424.1; -.
EMBL; M15763; AAA70423.1; -.
EMBL; M15764; AAA70422.1; -.
EMBL; M15764; AAA70422.1; -.
EMBL; M15764; AAA70422.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U1-JAN-1990 (Rel. 13, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation updat
FEMALE STERLLE HOMEOTIC PROTEIN (FRAGILE-CH
   VARIANT
                                                                            TRANSMEM
                                                                                      TRANSMEM
                                                                                                                             DOMAIN
                                                                                                                                       DOMAIN
                                                                                                                                                      DOMAIN
                                                                                                                                                                             PROSITE; PS50014;
                                                                                                                                                                                                                                                                                                                                                    or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                 entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                               modified
                                                                                                                                                                                                                                                                                                                                                                                           use
                                                                                                                                                                                                                                                                                                                                                                                                     the
                                                                                                                                                                                                                                                                                                                                                                                                                                                    -1- FUNCTION: REQUIRED MATERNALLY FOR PROPER EXPRESSION OF OTHER HOMEOTIC GENES INVOLVED IN PATTERN FORMATION, SUCH AS UBX.
-1- SIMILARITY: HIGH, TO HUMAN RING3 PROTEIN.
-1- SIMILARITY: CONTAINS 2 BROMODOWAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 apparent membrane proteins.";
Dev. Biol. 134:246-257(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-89276730; PubMed-2567251;
Haynes S.R., Mozer B.A., Bhatla-Dey N., Dawid I.B.;
"The Drosophila fish locus, a maternal effect homeotic gene, encodes apparent membrane proteins.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FS(1)H OR FSH
                                                   TRANSMEM
                                                              TRANSMEM
                                                                                                                                                                                          PROSITE; PS00633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                \vdash
                                                                                                                                                                                                                                                                                                                                                                                                     European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GHKHKHGHGHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       СИСИСИСИСИ 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                     pean Bioinformatics Institute. There are no restrictions non-profit institutions as long as its content is in and this statement is not removed. Usage by and for confrequires a linear removed.
 51
495
945
330
451
750
790
816
874
1731
1939
1022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                 protein;
                                                                                                                                                                                                       BROMODOMAIN.
                                                                                                                                                                            BROMODOMAIN_1;
BROMODOMAIN_2;
 123
567
1106
350
.471
770
810
830
830
894
1751
1959
909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75.9%;
81.8%;
                                                                                                                                                                 Bromodomain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein (fragile-chorion membrane protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 60; DB
Pred. No. 0.06
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
POTENTIAL.
G -> A.
H -> RKPYY
                                     POTENTIAL.
                                                              POTENTIAL.
                                                                                                                                       BROMODOMAIN 1. BROMODOMAIN 2.
                                                                                        POTENTIAL.
                                                                                                    POTENTIAL.
                                                                                                                POTENTIAL.
                                                                                                                         ET DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
0.062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 670;
                                                                                                                                                               Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                          no
                                                                                                                                                                                                                                                                                                                                                                                                     on
                                                                                                                                                                                                                                                                                                                                                                                          way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
RESULT 13
KE4_HUMAN
ID KE4_HUMAN
AC Q92504; Q9UIQO;
                                                                                                                                                                                                                                                                                                     SOUTH THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF 
                                                                                                                      Вþ
                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 12
KE4L_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SS
                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09xTQ7;
01-OCT-2000 (Rel. 4
01-OCT-2000 (Rel. 4
01-OCT-2000 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hypothetical
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE).
-!- SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; 299942; CAB17070.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the European Bioinformatics Institute. There are no rest use by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A. STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rhabditidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H13N06.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (Rel. 40, Last annotation update)
HYPOTHETICAL KE4-LIKE PROTEIN H13N06.5 IN CHROMOSOME
                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WormPep;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KE4L_CAEEL
                                                                                                                        276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ennard N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      597
                                                                                                                                                                                                                        Local
                                                                                                                                                             1 СНКНКНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHKHKHGHGHG 11
                                                                                                                      GHSHSHGHSHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GHGHGHGHGHG 607
                                                                                                                                                                                                   Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H13N06.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2038
                                                                                                                                                                                                                                                                                                                                                                                   214
247
297
386
429
463
92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein;
                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Peloderinae;
                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA,
                                                                                                                        286
                                                                                                                                                               11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CE18815
                                                                                                                                                                                                                                                                                                     488
55500
                                                                                                                                                                                                                                                                                                                                                                                   234
267
317
406
449
483
182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
                                                                                                                                                                                                                      73.48;
72.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 75.9%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               205332 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                   MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Caenorhabditis.
                                                                                                                                                                                                                                                                                                   N-LINKED (GLCNAC. . .) (PO)
N-LINKED (GLCNAC. . .) (PO)
N-LINKED (GLCNAC. . .) (PO)
N-LINKED (GLCNAC. . .) (PO)
N-LINKED (GLCNAC. . .) (PO)
                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 60;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                        Score 58; DB 1;
Pred. No. 0.093;
                                                                                                                                                                                                                                                                                                                                                                                                     HIS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               849E0706D50A0098 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
0.18;
                                                                                                                                                                                                                                          DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Usage
                                                                                                                                                                                                   ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                        Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2038,
                                                                                                                                                                                                                                                                                                                                                          .) (POTENTIAL)
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for
                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'n
                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 way
                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

01-OCT-2000 (Rel. 40, 01-OCT-2000 (Rel. 40, 01-OCT-2000 (Rel. 40,

Created)
Last sequence update)
Last annotation update) PROTEIN KE4

HISTIDINE-RICH MEMBRANE

OR RING5.

Fri

```
밁
                Ş
                                                                                           Matches
                                                   Best Local
                                                            Query Match
                                                                                                                                                                                                   TRANSMEM
TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                          CONFLICT
                                                                                                                                                                               DOMAIN
CARBOHYD
                                                                                                                                                                                                                                  TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                     EMBL; D82060; BAA11528.1; --
EMBL; AF117221; AAD12305.1; --
EMBL; AL031228; CAA20238.1; --
MIM; 601416; --
                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            flanking region.";
Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
Vergara A., Lana I., Corella A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        at the centromeric end of Genomics 35:600-602(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=97001166; pubMed=8812499;
Ando A., Kikuti Y.Y., Shigenari A., Kawata H., Okamoto Chen L., Ikemura T., Abe K., Kimura M., Inoko H.;
"CDNA cloning of the human homologues of the mouse Ke4 at the centromeric end of the human MHC region.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                              Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Encio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecular cloning and characterization of the human KE4 gene
 57
                  ب
           GHKHKHGHGH 10
GHSHAHGHGH
                                       l Similarity
8; Conserv
                                                                                            469
                                                                                                                                                                     10
138
169
214
381
417
30
238
330
330
                                        Conservative
                                                                                           ÃĄ;
                                                                                                                                                                                                                                                                            Glycoprotein.
66
                                                                                                                                                                      158
189
234
401
436
114
114
263
330
                                                                                           50118
                                                  72.2%;
80.0%;
                                                                                           ₩,
                                        0
                                                                                                                                                                                                                                 POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                  Score 57; DB 1 Pred. No. 0.12;
                                                                                                             N-LINKED (GLCNAC. . . ) (POTENTIAL).
A -> G (IN REF. 1 AND 2).
E -> G (IN REF. 1 AND 2).
S -> T (IN REF. 1 AND 2).
CALLTEGGAVGSEIAGGAGPGWYLPFTAGGFIYVATVSVLP
ELLREASPLOSLLEVLGLGGVIWYLIAHLE -> VPFSL
KEEQWTVKLQVVQVLAGSCHLLQVALST (IN REF. 1
                                                                                                                                                                                                             POTENTIAL.
                                                                                          AND 2).
6504A1EF5AA6A5B9 CRC64;
                                                                                                                                                                                         HIS-RICH.
                                                                                                                                                                                                    HIS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         de Miguel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         С.,
                                                            1;
                                        2;
                                                            Length 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Migliaccio
                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                  LUNG, KIDNEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and Ke6 genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N., Shiina
                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                       0
```

```
RESULT 15
KE4_BRARE
ID Q9PUB8
AC Q9PUB8
DT 01-OCT
DT 01-OCT
DT 11-OCT
DT HISTID
GN HKE4.
OS Brachy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
KE4_PIG
                                                                                                                                                 В
                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KE4_PIG STAN
Q29175; Q9XT01;
01-OCT-2000 (Rel. 4
01-OCT-2000 (Rel. 4
01-OCT-2000 (Rel. 4
                                   KE4_BRARE
Q9PUB8;
Q1-OCT-2000
01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                             NON_TER
TRANSMEM
DOMAIN
DOMAIN
NON_CONS
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases :- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PR-1-SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                       01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HISTIDINE-RICH MEMBRANE PROTEIN KE4 HOMOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Physical organization of the swine major histocompatibility complex class II region.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Evaluation and characterization of a porcine library: analysis of 839 clones."; Mamm. Genome 7:509-517(1996).
Brachydanio rerio (Zebrafish) (Zebra danio)
                                                                                                                                                                                                                                                                                                                                                               EMBL; F14787; CAA23256.1; -. EMBL; AF146397; AAD44801.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-Belgian Landrace;
Chardon P., Rogel-Gaillard C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 125-155 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 1-124 FROM N.A. TISSUE-Small intestine; MEDLINE-96327607; PubMed-8672129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sus scrofa (Pig).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HISTIDINE-RICH PROTEIN
                                                                                                                                                                                                                                                                                                                                                     Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Vaiman M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Winteroe A.K., Fredholm M., Davies W.;
                                                                                                                                                 48
                                                                                                                                                                         ۳
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
                                                                                                                                                GHGHSHGHGH
                                                                                                                                                                         GHKHKHGHGH
                                                                                                                                                                                                 Similarity 80.0
8; Conservative
                                                                                                                                                                                                                                                             1
19
49
81
124
155
                                                                                                                                                                                                                                                                ΑĄ,
                                                                                                                                                                                                                                                      1 39
59
86
125
155
16840 )
                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 40, Created)
. 40, Last sequence upd.
. 40, Last annotation upd.
ROTEIN KE4 (FRAGMENTS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata; Craniata; Vertebrata; Cetartiodactyla; Suina; Suidae;
                                                                                                                                                                                                            70.9%;
                                                                                                                                                                                                                                                                WW;
                                                                                                                                                                                                                                                                                                  HIS-RICH.
POLY-GLU.
                                                                                                                                                                                                             Score 56; I
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                56354DE3CAAE4524 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peelman L.J., Yerle
                                                                                     352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                     update)
                                                                                                                                                                                                               DB 1;
0.057;
                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEIN (PROBABLE).
                          (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       small intestine
                                                                                                                                                                                                                          Length 155;
                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Euteleostomi; Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Renard
                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           c.,
                                                                                                                                                                                                Gaps
                                                                                                                                                                                                   0,
```

```
Qy
                                                                                                                                                               Search completed: July 6, 2001, 09:26:37 Job time: 968 sec
                                                         ₽
                                                                                                     Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                              CARBOHYD
NON_TER
SEQUENCE
                                                                                                                                                                                                 TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                                                                                                                  TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane; TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi; Cypriniformes; Cyprinidae; Rasborinae; Danio.
NCBI_TaxID=7955;
                                                                                                                                                                                                                                                                                            EMBL; AF196345; AAF05821.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                        94 GHAНКНGНАН 103
                                                                               1 СНКНКНСНСН 10
                                                                                                                                                              128
161
215
318
318
177
311
352
352 AA;
                                                                                                      Conservative
                                                                                                                                                                                  Glycoprotein.
3 23
28 148
61 181
61 235
115 235
116 338
24 105
177 217
311 311
                                                                                                                                                               37922 MW;
                                                                                                                 70.9%;
                                                                                                     Score 56; DB 1;
Pred. No. 0.13;
0; Mismatches
                                                                                                                                                                                                POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
HIS-RICH.
HIS-RICH.
                                                                                                                                                                                  N-LINKED (GLCNAC. . .) (POTENTIAL).
                                                                                                                                                               C8C8C60F6D2BA8A6 CRC64;
                                                                                                      2; Indels
                                                                                                                           Length 352;
                                                                                                     0;
                                                                                                     Gaps
                                                                                                     0
```

Fri

Run

on:

July

OM protein - protein search, using sw model

GenCore version Copyright (c) 1993 - 2000

4.5 Compugen Ltd.

```
Minimum
Maximum
                                                                                                                                                               Result
                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                        ö
                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                   DB DB
                                                                                                                                                        Score
                                                                                                                                                                                                                                                                                                                                                                                  seq
SPTREMBL_16:*

1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
4: sp_human:*
5: sp_inverteb
6: sp_mammal:*
7: sp_mhc:*
8: sp_organe1
9: sp_phage:*
10: sp_plant:*
11: sp_unclass
13: sp_vertebr
13: sp_vertebr
                                                                                                                                                                                                                                                                                                                                                                                  length: 0
length: 2000000000
                                                                                                                                                        Match
                                                                                                                                                               Query
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                         425026 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-437-912-3
79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                СНКНКНСНСНСК 12
                                                                                                                                                                                                                                                                                                                      sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                          sp_mammal:*
                                                                                                                                                                                                                                                                                                sp_invertebrate:*
                                                                                                                                                                                                                          sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                                                                                                                                                                          sp_organelle:*
                                                                                                                                                                                                                                                   sp_rodent:*
                                                                                                                                                                                                                                                          sp_plant:*
                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6, 2001, 09:25:52; Search time 118.42 Seconds (without alignments) 13.407 Million cell updates/sec
450
86
99
1899
3988
490
494
495
554
693
79
218
218
385
218
385
                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                         132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapext 0.5
5555555555555
                     027920
022671
09287C7
099J12
0981036
098W9
099W2C1
099W2C1
099U00
099W4C1
099U00
099W4C1
099U00
097TN0
09W4 16
0977280
0977280
       Q9VWX5
                                                                                                                                                        IJ
                                                                                                                                                                              SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                           425026
                                                                                                        Q27920 bradysia hy
O22671 alnus gluti
Q9zrc7 alnus gluti
Q9pj12 campylobact
O81036 arabidopsis
                                                                          Q9x9w6 streptomyce
Q9grw9 drosophila
Q9vex1 drosophila
Q9w4c1 drosophila
                     077280 drosophila
Q9gtn1 drosophila
Q9v3p9 drosophila
                                            Q9gtn0 drosophila
Q9w4i6 drosophila
                                                                   Q9vu00 drosophila
              Q9vwx5
                                                                                                                                                       Description
                                                            Q9m435 quercus rob
              drosophila
                                                                                                                                                                                                                                                                                                                RESULT
Q27920
                      022671
                             RESULT
                                                    рЬ
                                                                 δÃ
```

45	44	43	42	41	40	39	38	37	36	35	34	ω ω	32		30	29	28	27	26	25	24	23	22	21	20
54	54	54	54	54	54	54	54	54	55	55	55	55	55	55	55	56	56	56	56	57	57	58	58	59	59
68.4	68.4	68.4	68.4	68.4	68.4	68.4	68.4	68.4	•		69.6		69.6		69.6	•	70.9	70.9	70.9	72.2	72.2	73.4	73.4	74.7	74.7
1891	1221	1140	612	344	337	334	251	199	989	492	386	378	336	224	198	1493	1235	1150	348	325	318	519	126	1085	1064
S	Çī	υ	2	10	ъ	10	σ	10	σ	11	10	10	N	N	σ	ഗ	σ	ഗ	ഗ	σı	w	տ	11	ഗ	ហ
077275	Q24079	Q9VD60	Q9KZU9	082643	Q9VHP7	Q9M271	Q18577	Q9LYB2	Q9W2S4	Q9JKN2	Q9FPW7	Q9LXS1	Q55451	069955	Q9NNV9	Q9VEF7	Q9VYF3	Q9VWN4	1X2M6Ö.	9мүм9	Q9P5K2	Q9VUI9	009016	Q24455	Q9V5N1
077275 drosophila	Q24079 drosophila	Q9vd60 drosophila	Q9kzu9 streptomyce	082643 arabidopsis	Q9vhp7 drosophila	Q9m271 arabidopsis	Q18577 caenorhabdi	Q9lyb2 arabidopsis			Q9fpw7 thlaspi cae	Q91xs1 arabidopsis	Q55451 synechocyst	069955 streptomyce	Q9nnv9 plasmodium		Q9vyf3 drosophila	Q9vwn4 drosophila	-	Q9vym9 drosophila	Q9p5k2 neurospora	Q9vui9 drosophila	009016 rattus norv	Q24455 drosophila	Q9v5nl drosophila

## ALIGNMENTS

```
AC
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 10; Conserv
O22671 PRELIMINARY; PRT; O22671; O1-JAN-1998 (TrEMBLrel. 05, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q27920 PRELIMINARY;
Q27920;
Q1-NOV-1996 (TrEMBLrel. 01,
Q1-NOV-1996 (TrEMBLrel. 08,
Q1-NOV-1998 (TrEMBLrel. 08,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-95393845; PubMed-7664619; Monesi N., Fernandez M.A., Fontes A.M., Basso L.R., Nakanishi Y., Baron B., Buttin G., Paco-Larson M.L.; Baron B., Buttin G., Paco-Larson M.L.; Baron B., Buttin G., Paco-Larson M.L.; Baron B., Buttin G., Paco-Larson M.L.; Baron B., Buttin G., Paco-Larson M.L.; Baron B., Buttin G., Paco-Larson M.L.; Baron B., Buttin G., Paco-Larson M.L.; Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Baron B., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Basso L.R., Nakanishi Y., Ramanishi Y., Nakanishi Y., Basso L.R., Nakanishi Y., Ramanishi Y., Ramanishi Y., Nakanishi Y., Ramanishi Y., Nakanishi Y., Ramanishi Y., Nakanishi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U13883; AAA83554.1; -. EMBL; U13892; AAA83555.1; -. SEQUENCE 450 AA; 47185 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
TISSUE=SALIVARY GLAND;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bradysia hygida.
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda;
Pterygota; Neoptera; Endopterygota; Diptera; Nematoce
Sciaridae; Bradysia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=35572;
                                                                                                                                                                                                                                                                                                                                                 76 СНКНСНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                 1 GHKHKHGHGHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                 86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      84.8%;
90.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Endopterygota; Diptera; Nematocera; Sciaroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 67; DB 5;
Pred. No. 0.0087;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1F0633CE9B7F964C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               450
                                                                                                           86
                                                                                                           Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
PRESULT

QPERCT

QPERCT

ID QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QPERCT

QP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FLOW MULLES;
TISSUE-ROOT NODULES;
Dobritsa S.V., Mullin B.C.;
In vitro expression of actinorhizal nodulin Agnobden of the toxicity of Escherichia coll.'
(In) Stacey G., Mullin B.C., Gresshoff P.M. (eds.)
the Biology of Plant-Microbe Interactions:
Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Symposium on Proceedings of the 8th International Sym
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE=97348585; PubMed=9204569;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mullin B.C.;

Pawlowski K., Twigg P., Dobritsa S., Guan C., Mulli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JAN-1998
01-NOV-1998
AG164 PROTEI
AG164.
                           TISSUE=ROOT NODULES; Pawlowski K., Twigg P.G., Dobritsa S.V., Guan C., Mullin B.C Pawlowski K., Twigg P.G., Dobritsa S.V., Guan C., Mullin B.C "A nodule-specific gene family from Alnus glutinosa encodes and histidine-rich proteins expressed in the early stages of actinorhizal nodule development."; Submitted (SEP-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Signal.
                                                                                                                                                                                                                                                                                                                                        protein from Alnus
Thesis (1993), The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Magnoliophyta; eudicotyledons; Fagales; Betulaceae; Alnus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Embryophyta; Trachec Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGNT84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTINORIZAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-1999
01-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9ZRC7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9ZRC7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae;
Magnoliophyta; eudicotyleo
Fagales; Betulaceae; Alnus
NCBI_TaxID=3517;
                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Twigg P.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-ROOT NODULES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                "Isolation of a nodule-specific cDNA encoding a protein from Alnus glutinosa."; Thesis (1993), The University of Tennessee, Knox
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=3517;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alnus glutinosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 СНКНКНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GHRHVHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          glutinosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROTEIN
   U69156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
9; Conserv
                                                                                                                                                                                                                                                              FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel.) (TrEMBLrel.) (TrEMBLrel. NODULIN AGNO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
30
\(\frac{1}{AA}\);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N.A.
   AAD00171.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Alder).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29
86
9188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rel. 10, Created)
rel. 10, Last sequence up
rel. 13, Last annotation
AGNOD-GHRP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . 0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Embryophyta; Tracheophyta; S
lons; core eudicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
POTENTIAL.
D85B7EF888C8899A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           64;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tracheophyta; S
dicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 10;
0.0048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               on update)
                                                                                                                                                                                                                                                                                                                                        Knoxville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Publisher (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AgNOD-GHRP coli.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                                                                                                                                                                                                                                              putative glycine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Spermatophyta;
e; eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Spermatophyta;
e; eurosids I;
                                                                                                                                                                                                                                                                                                                                            TN,
                                                                                                                                                                                       B.C.
                                                                                                                 of.
                                                                                                                                                glycine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
```

```
В
                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SQ DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                   081036
081036;
01-NOV-1998
01-NOV-1998
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9PJ12
Q9PJ12;
01-OCT-2000
01-OCT-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                            PROSITE;
SEQUENCE
                                               Brassicales; Brassicaceae; NCBI_TaxID=3702;
                     STRAIN-CV.
                                                                  Eukaryota; Viridiplantae; Embr
Magnoliophyta; eudicotyledons;
                                                                                     Arabidopsis thaliana
                                                                                                F19D11.8
                                                                                                          PUTATIVE ZINC
                                                                                                                                                                                                                                                                                                                                                                    Parkhill J., Wren B.W., Mungall K., Ketley J.M., Churcher C., Basham D., Chillingworth T., Davies R.M., Feltwell T., Holroyd Basham D., Karlyshev A.V., Moule S., Pallen M.J., Penn C.W., Quail M.A., Rajandream M.A., Rutherford K.M., Van Vliet A.H.M.,
          Rounsley
                             SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                              Whitehead S., Barrell B.G.;
"The genome sequence of the food-borne reveals hypervariable sequences.";
Nature 403:665-668(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. STRAIN-NCTC 11168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Campylobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Campylobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SLYD OR CJ0115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002395;
PRINTS; PR00334; KIN:
SEQUENCE 99 AA; 10
                                                                                                                                                                                                                                                                                                                       EMBL; AL139074; CAB72599.1;
                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20150912; PubMed=10688204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=197;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEPTIDYL-PROLYL CIS-TRANS
                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                        166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                51
                                                                                                                                                                                                                    1 GHKHKHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GHKHKHGHGHG
  ;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GHRHVHGHGHG
                                                                                                                                                                                                        GHDHHHGHGHG
 S.D., Lin X.,
Ronning C.M.,
                                                                                                                                                                                                                                              Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
9; Conser
                                                                                                                                                                                                                                                                                            PS50059; FKBP_PPIASE_3; 2.
189 AA; 20132 MW; 47B5F5D047549D7F CRC64;
                                                                                                                                                                                                                                                                                                               IPR001179;
                                                                                                                    (TrEMBLrel.
                                                                                                                                     (TrEMBLrel.
                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                          TRANSPORTER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               jejuni.
                                                                                                                                                                                                        176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KININOGEN.; 10567 MW;
                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11
                                                                           (Mouse-ear cress).
ntae; Embryophyta;
                                                                                                                                                                                                                                                        78
81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              81
81
 Kaul S., Shea
Fraser C.M.,
                                                                                                                  08,
13,
                                                                                                                                                                                                                                                        . 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     epsilon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ISOMERASE
                                                          Arabidopsis
                                                                                                                   Last
Last
                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Last sequence update)
Last annotation updat
                                                                                                                                       Created)
                                                                                                                                                                                                                                                       Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2ACBE4D57C070E83 CRC64;
                                                                   core eudicots;
                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                   sequence update) annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     subdivision; Campylobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64;
No.
 a T.P., Fujii C.Y., Mason T.M.
Somerville C.R., Venter J.C.;
                                                                                                                                                          398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  189
                                                                  Tracheophyta; Spdicots; Rosidae;
                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                   pathogen
                                                                                                                                                                                                                                                                 DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 10;
0.0056;
                                                                                                                                                         A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA
                                                                                                                                                                                                                                                                 .
ک
                                                                                                                   update)
                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                 Length 189;
                                                                                                                                                                                                                                                                                                                                                    Campylobacter jejuni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 99
                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                   Spermatophyta;
e: eurosids II;
                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                         Ø
                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
RESULT
Q9GRW9
                                                                                                                                                                                                           RA Redenbach M., Kieser H.M., Denapaite D., Eichner A., Cul Rinashi H., Hopwood D.A.; RT "A set of ordered cosmids and a detailed genetic and phy. RT the 8 Mb Streptomyces coelicolor A3(2) chromosome."; RL Mol. Microbiol. 21:77-96(1996).

REMBL; ALD96743; CAB46407.1; -. W Hypothetical protein.

SEQUENCE 490 AA; 52666 MT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
Q9X9W6
ID Q9
    Barara
                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SORRERE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뫄
                                                                                                                   뫄
                                                                                                                                       δÃ
                                                                                                                                                              Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 9
    ZINC/IRON
              01-MAR-2001
01-MAR-2001
                                    Q9GRW9;
01-MAR-2001
                                                          Q9GRW9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1999 (TrEMBLrel. 12, Cr
01-NOV-1999 (TrEMBLrel. 12, La
01-NOV-1999 (TrEMBLrel. 12, La
HYPOTHETICAL 52.7 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9X9W6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002524; -. Pfam; PF01545; Cation_efflux; SEQUENCE 398 AA; 43827 MW;
                                                                                                                                                                                                                                                                                                                                                              Submitted
                                                                                                                                                                                                                                                                                                                                                                        STRAIN=A3(2);
Bentley S.D., Parkhill J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9M6X6D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (SEP-1998) to the EMBL; AC005310; AAC33498.1;
                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                   Seeger K., Harris D.;
"A set of ordered cosmids and a detailed genetic and physical map
the 8 Mb Streptomyces coelicolor A3(2) chromosome.";
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Arabidopsis thaliana chromosome II BAC F19D11 genomic sequence.";
Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Actinomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                   49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ب
                                                                                                                                          _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                       GHKHKHGHGHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               СНЅНСНСНСНС 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GHKHKHGHGHG
                                                                                                                  GHDHHHGHGHG
                                                                                                                                                              9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FROM N.A.
01 (TREMBLrel. 16, Created)
01 (TREMBLrel. 16, Last sequence update)
01 (TREMBLRel. 16, Last annotation update)
REGULATED TRANSPORTER-RELATED PROTEIN 3, DZIP3 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                             (JUL-1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                               Conservative
                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11
                                                                                                                   59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Streptomycineae;
                                                                                                                                                                          78
81
                                                                                                                                                                                                                                                                                                                                                             ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78.5%;
81.8%;
                                                                                                                                                                         . 60 of
of
of
of
                                                                                                                                                                                                                                                                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                        Barrell B.G.,
                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last
                                                                                                                                                             Score 62; DB
Pred. No. 0.05
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.
7E20E0B29237BB23 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Streptomycetaceae; Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       490
                                                          494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Actinobacteridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 10;
0.044;
                                                                                                                                                                         DB 2;
0.054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                         Ą
                                                                                                                                                                                                                                                                                                                                                                       Rajandream M.A.;
                                                                                                                                                              2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                             databases
                                                                                                                                                                                   Length 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 398
                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                             physical map for
                                                                                                                                                                                                                                                                                                     Cullum J.,
                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT
Q9VEX1
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RRA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon K.H., Dayle C.G., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Byraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan Rocha S., Dunkov B.C., Dunn P.,
RA Dorlor K.J., Evangelista C.C., Ferraz C., Ferraz C., Ferraz S., Fleischmann W.,
RA Forler C., Gabrait M.A., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz C., Ferraz
          RA Fosler C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K.,

As Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,

As Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,

As Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,

As Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,

As Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,

As Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,

As Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,

As Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.I.,

As Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,

As Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,

As Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,

Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,

As Reinert K., Remington K., Sannders R.D.C., Scheeler F., Shen H.,

Shue B. C. Siden-Fiamor T. Simnor M. Chuneki M.P. Smith M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9VEX1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster.";
Submitted (AUG-2000) to the EMBL/GenBank/DDBJ
EMBL; AJ401615; CAC14874.1; .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Drosophila melanogaster (Fruit fly).
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ephydroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP3 OR CG6898.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CG6898 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-CANTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Identification of three zinc-iron regulated transporter-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DZIP3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lind M.I., Soderhall
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                236 GHGHSHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GHKHKHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  494 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  148/4.1; -.
54201 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 62; DB
Pred. No. 0.05
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2FB595C6E3BE88B8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 5;
0.054;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                             Nelson D.L.,
                                             Reese M.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                            Χ. A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RESULT
Q9W4C1
               RA Adams M.D., Celniker S.E., HOLL R.A., Evans C.A., Gocayne J.D.,
RA Adamstides P.G., Scherer S.E., If P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Burandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Burandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Baster E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.M.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Shen H.,
RA Shue E., Spraddling A.C., Stapleton M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOR PRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Spier E., Spradling A.C., Stapleton M., Strong R., Sun E., Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X., Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A., Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L., Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O., Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.; "The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).

EMBL, AE003712; AAF55295.1; -. FlyBase; FBgn0038412; CG6898.
SEQUENCE 495 AA; 54292 MW; A41DBEE85446FFCB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CG15784 PROTEIN CG15784.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9W4C1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9W4C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ephydroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pterygota; Neoptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20196006;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GHKHKHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GHGHSHGHGHG 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ) (TrEMBLrel.) (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Endopterygota; Diptera; Brachycera; Muscomorpha; ilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 5;
0.055;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                     K.A.,
                                                                                                                                                                                                                                                                                                                                Σ.
                                                                                                                                                                                                                                                                                                                                                 ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

```
RESULT
Q9VU00
   RA Ballew R.M., Basu A., Baxendale J., Bayraktarglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Berson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davepoort L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davepoort L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davepoort L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davepoort L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davepoort I.B., Davies P.,
RA Dodson K.J., Devines M., Duyan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K.J., Evangelista C.C., Ferrac C., Ferriera S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibeywam C.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibeywam C.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Shue B.C., Siden-Klamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Mand T., Venter E., Wang A.H., Wang X.,
RA Mand T., Venter E., Wang A.H., Wang X.,
RA Mand T., Venter E., Wang A.H., Wang X.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9VU00
Q9VU00;
01-MAY-2000
01-MAY-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G. Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G. Abril J.F., Agdayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballow B. B. Bartin B. An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballow B. B. Bartin B. An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballow B. B. Bartin B. An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballow B. B. Bartin B. Baldwin D., Baldwin D., Baldwin B. B. Bartin B. Baldwin D., Baldwin D., Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwin B. Baldwi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao (Zheng X.H., Zhong F.N., Zhong W., Zhu X., Zhu S., Zhu Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.; "The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(200).
EMBL; AB003434; AAF46035.1; -. EryBase; FBgn0029766; CG15784.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=20196006; PubMed=10731132; Adams M.D., Celniker S.E., Holt R.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAUP OR CG10605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAUP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Interpro; IPR002395; ...
PRINTS; PR00334; KININOGEN.
SECULENCE 554 AA; 62329 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GHKHKHGHGHGK 12
                          Z.-Y., Wassarman D.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHGHGHGHGR 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
Woodage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78.5%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13,
13,
   Worley K.C.,
                                Weinstock G.M., Weissenbach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>-</u>-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 62;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9CE2F80A7A1D902D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Evans C.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 5;
0.061;
   Wu D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gocayne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q., Zheng
X., Smith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G.L.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
Q9GTNO
ID Q0
AC Q0
DT 0.
DT 0.
DT 0.
DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT 0.
CO DT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
Q9M435
                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9M435
Q9M435;
Q1-QCT-2000
                                                Q9GTNO PRELIMINARY; PRT; 213 AA.
Q9GTNO;
Q1-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DS06238.4-LIKE PROTEIN (FRAGMENT).
Drosophila yakuba (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Quercus robur (English oak).

Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Fagaceae; Quercus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Glibbs R.A., Myers E.W., Rubin G.M., Venter J.C., "The genome sequence of Drosophila melanogaster.", science 287:2185-2195(2000).

-i SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
-i SIMILARITY: TO OTHER HOMEOBOX DOMAINS.
EMBL; AE003540; AAR49895.1; -.
E1yBase: FBgn0015919; caup.
                             Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Identification of a phase-change related mRNA in oak shoot cultures derived from basal sprouts and crown branches.";
Submitted (NOV-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gil B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-2000 (TYEMBLEE). 15, Created)
01-OCT-2000 (TYEMBLEE). 15, Last sequence update)
01-OCT-2000 (TYEMBLEE). 15, Last annotation update)
PHASE-CHANGE RELATED PROTEIN PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001356;
pfam; pF00046; homeobox; 1.
pROSITE; pF00027; HOMEOBOX_1;
pROSITE; pS50071; HOMEOBOX_2;
pROSITE; pS50071; HOMEOBOX_2;
pROSITE; SM00389; HOX; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AJ271778; CAB72442.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-IN VITRO SHOOT CULTURES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=38942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA-binding; Homeobox; Nuclear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     649
                                                                                                                                                                                                                                                                                                                                            45 GHHHGHGHGHG 55
                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity nes 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                            1 СНКНКНСНСНС 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKHKHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHGHSHGHGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yeh R.-F., Zaveri J.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pastoriza E.M.,
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                        Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79
                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8414 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73667 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77.2%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78.5%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ballester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     i J.S., Zhan M., Zhang G., Zhao Q., Zhong W., Zhou X., Zhu S., Zhu X., Rubin G.M., Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 61; DB 10
Pred. No. 0.013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8E45CABF40F00B6F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 62; DB 5; Pred. No. 0.076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            protein.
FBEB1616493F7EC9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sanchez C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 693;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zheng
Smith
                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
RA Addmin M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Addmin M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E. Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Barandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeliffer B.D.,
RA Barandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeliffer B.D.,
RA Baril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J.B., Bayaktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayaktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Gherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Gerry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Gary N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibeywam C.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibeywam C.,
RA Harris N.L., Harvey D., Heiman T.J., Kernison J.A., Ketchum K.A.,
RA Mcinulov G., Milshina N.V., Wobarry C., Morris J.R., Houck J.,
RA Merkulov G., Milshina N.V., Wobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Wobarry C., Morris J., Weisherson D.L.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Williams S.M., Woodaet T., Worlev K.C., Wu D., Yang S., Yao O.A.,
Wang S.-Y., Wassarman D.A., Weinschock G., Wang R., Sun E.,
RA Williams S.M., Woodaet R., Worlev K.C., Wu D., Yang S., Yao O.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OC OX OX RP RP RT RT RT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           O9W416
O9W416;
01-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
01-MAR-2001 (TrEMBLrel. 1
      Wang Z.-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Edukaryota; Neoptera; Endopterygota; Diptera; Brachycera; Musc Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The evolutionary analysis of 'orphans' from the Drosophila genome identifies incorrectly annotated and rapidly evolving genes."; Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AF264920; AGG10259.1; -. NON_TER 213 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EG:84H4.4 OR CG3081.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EG:84H4.4 PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Schmid K.J., Aquadro C.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ephydroidea; Drosophilidae; Drosophila
NCBI_TaxID-7245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180 GHGHAHGHGHG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 СНКНКНСНСНС 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        213 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23731 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       77.2%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13,
13,
Weinstock G.M., Wei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 61;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        315B8590D97B86C9 CRC64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5;
0.034;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
RESULT
Q9GTN1
ID Q9
AC Q9
DT 01
DT 01
DT 01
DT 01
DT 02
CC EU
CC EU
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC EV
CC E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RA
RA
RT
RT
DR
DR
SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 81.4
Matches 9; Conservative
                                                                                                                        Q9GTN1:
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
DS06238.4-LIKE PROTEIN (FRAGMENT).
Drosophila simulans (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda
Pterygota; Neoptera; Endopterygota; Diptera; Brachy
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1998 (TIEMBLrel. 08, Last sequence update)
01-MAR-2001 (TIEMBLrel. 16, Last annotation update)
EG:8444.4 PROTEIN
EG:8444.4 OR CG3081.
Drosophila melanogaster (Fruit fly)
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Inse
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Zheng X.H., Zhong F. X., Zhong W., Zhou X., Zhu S., Zhu Glbbs R.A., Myers E.W., Rubin G.M., Venter J.C.; The genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).

EMBL; ABO03431, AAF45965.1; -
FlyBase; FBgn0025613; EG:86H4.4.

SEQUENCE 457 AA; 48919 MW; 70B4B7ADDD02E0AD CRC64;
STRAIN-NORTH Schmid K.J.,
                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                        Q9GTN1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases EMBL; AL031766; CAA21115.1; -. FlyBase; FB990025613; EG:88H4.4. SEQUENCE 605 AA; 64947 MW; B06C84AC4D7D2C84 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.

Ferraz C., Vidal S., Brun C., Bucheton A., Demaille J.G.;

Feguencing the distal X chromosome of Drosophila melanogaster.";

"Seguencing the distal X chromosome of Drosophila melanogaster.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Benos P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                     NCBI_TaxID=7240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         340 СИСИНИСИСИС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 СНКНКНСНСНС 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GHKHKHGHGHG 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  СНСНННСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity 81.
                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
CAROLINA 17;
Aquadro C.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  77.2%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           77.2%;
81.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             i J.S., Zhan M., Zhang G., Zhao Q., Zhong W., Zhou X., Zhu S., Zhu X., Rubin G.M., Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Score 61; DB
; Pred. No. 0.09
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 61; DB Pred. No. 0.07 % Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5;
0.094;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5;
0.071;
                                                                                                                                                                                                                                                                                                                                                                     Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                                       Hexapoda; Insecta;
a; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 605;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 457;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Insecta;
                                                                                                                                                       Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Zheng L.,
Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
```

```
ğ
Search completed: July Job time: 989 sec
                                                          멍
                                                                                                                                                            SOFRE
                                                                                                  Query Match
Best Local Similarity 81.0
Matches 9; Conservative
                                                                                                                                                         "The evolutionary analysis of 'orphans' from the Drosophila identifies incorrectly annotated and rapidly evolving genes. Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AF264919; AAG10258.1; -.

NON_TER 206 206
206 AA; 23011 MW; E24B8C189BC0746D CRC64;
                                                          173
                                                                       GHKHKHGHGHG
                                                          СНУНСНСНСНС 183
                                                                              11
                                                                                                                                                     206
; 23011 MW;
           6,
                                                                                                               75.9%;
81.8%;
             2001,
             09:25:53
                                                                                                    0;
                                                                                                               Score
Pred.
                                                                                                    Mismatches
                                                                                                               No.
                                                                                                              DB 5;
0.046;
                                                                                                    2
                                                                                                                       Length
                                                                                                    Indels
                                                                                                                                                                                                    opnila genome
genes.";
                                                                                                   0
                                                                                                   Gaps
```

GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd. ()

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A_Geneseq_0601:*

1: /SIDSB/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDSB/gcgdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqp/AA1982.DAT:*
3: /SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
4: /SIDSB/gcgdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDSB/gcgdata/geneseq/geneseqp/AA1984.DAT:*
6: /SIDSB/gcgdata/geneseq/geneseqp/AA1985.DAT:*
7: /SIDSB/gcgdata/geneseq/geneseqp/AA1986.DAT:*
9: /SIDSB/gcgdata/geneseq/geneseqp/AA1987.DAT:*
9: /SIDSB/gcgdata/geneseq/geneseqp/AA1989.DAT:*
10: /SIDSB/gcgdata/geneseq/geneseqp/AA1989.DAT:*
11: /SIDSB/gcgdata/geneseq/geneseqp/AA1990.DAT:*
12: /SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
13: /SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
14: /SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
15: /SIDSB/gcgdata/geneseq/geneseqp/AA1991.DAT:*
16: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
17: /SIDSB/gcgdata/geneseq/geneseqp/AA1995.DAT:*
18: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
18: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
20: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
22: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
23: /SIDSB/gcgdata/geneseq/geneseqp/AA1999.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                      Match
          100.0
100.0
100.0
100.0
100.0
100.0
93.2
93.2
93.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     July 6, 2001, 09:09:17; Search time 113.68 Seconds (without alignments) 6.399 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412676 seqs, 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-437-912-4
74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                :/SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1994.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
:/SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                  by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                      Length DB
        12
16
28
28
179
186
255
255
62
63
                                                                                                                                                                                                                                                                                                                         Ħ
                                AAY81995
AAB06337
AAY81997
AAY93351
AAY93349
AAY93342
AAY93342
AAY93348
AAY93348
                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
Light chain of hum
Light chain of hum
Light chain of hum
Light chain of hum
Light chain of hum
Light chain of hum
Light chain of hum
Partial peptide of
Light chain of hum
                                                                                                                                                                                                                                                                                                                    Description
                                                                                                                                                                                                           Human high molecul
Human two-chain hi
Human high molecul
```

37 37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	38	38	38	38	38	38	39	4 C	40	41	41	46	46	69	
50. 50.	50.	50.	50.	50.	50.	50.	50.		50.	50.	50.	50.	50.	ភ	. 50.	50.	50	50.	51.	51.	ر ت	51.	51.	51.	52.	сr	54.	55.	55.	62.	62.	93.	
384 384	384	384	384	384	384	384	384	384	384	384	384	345	286	286	263	263	263	263	578	532	486	293	215	36	60	376	376	20	19	110	41	131	
21 21	21	21	21	21	21	21	21	21	21	18	14	19	21	20	22	21	20	10	20	20	20	20	20	18	16	18	18	17	21	16	16	16	
018	018	810	017	017	7	017	217	AAY70174	15	AAW28545	AAR34649	AAW46493	AAY70235	AAY25094	AAB48846	AAB13014	AAY29859	AAP92003	AAY24423	AAY24425	AAY24427	AAY25095	AAY37046			AAW35387	AAW35386	<b>~</b>	AAY71879	AAR75178	₹.n	AAR75181	
ন ন			Ŧ	Ŧ	T)	Ŧ	. heparin	dified F. }	F. heparinum hepar	ysa		ADP-ribosyl	RNA-associa			Complement inhibit	compleme	Ö			polymorphi	n typ	o acid s	Cold active protea	Deduced from chrom		Murine metastatic	high polyme	pti		о О	Partial peptide of	

 $\begin{array}{c} \textbf{1} \\ \textbf{2} \\ \textbf{3} \\ \textbf{4} \\ \textbf{4} \\ \textbf{4} \\ \textbf{4} \\ \textbf{2} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{3} \\ \textbf{$ 

## ALIGNMENTS

```
DT NO CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY81995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                  WPI; 2000-376483/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; coular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                    (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human high molecular weight kininogen domain 5 fragment #4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY81995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY81995 standard; peptide; 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       щ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0107833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
```

0,

```
AAABO6337
ID AAABO
XX AABO
XX 16-O
XX 16-O
XX Huma
XW Huma
XW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
KW Angi
Angi
PM WCCI
XX WAFI
DR WFI
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
PM Angi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising part or all of the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be methods using, for example, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
The present sequence is derived from human two-chain high molecular weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 kD
                                                                                                                Claim 15; Page 29; 52pp; English.
                                                                                                                                                                                                        endothelial cell proliferation, and
                                                                                                                                                                                                                                    A pharmaceutical composition used to inhibit angiogenesis, inhibit
                                                                                                                                                                                                                                                                                                 WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                              McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human two-chain high molecular weight kininogen domain 5 fragment #9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB06337;
                                                                                                                                                                                                                                                                                                                                                                                                                 (UTEM ) UNIV TEMPLE. (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; high molecular weight kininogen; HK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB06337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gkkngkhngwkt 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Æ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-0107833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 74; L
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                        induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT
AAY81997
ID AAY8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 12
                                                                            high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a composition ocular disorders.
rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell prolifer
                                                                                                                                                                                                                          The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain
                                                                                                                                                                                                                                                                                                                                                                                                                                  A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                                                                                                                                                                                                                                                                                                                                Claim 13; Page 29; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
two-chain sight molecular weight kininogen; ocular disorder;
anglogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human high molecular weight kininogen domain 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY81997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY81997 standard; peptide; 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   glycoprotein which binds with high affinity to endothelial cells. Hka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UTEM ) UNIV TEMPLE.
(MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
les 12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       տ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gkkngkhngwkt 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0107833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 74; DE
Pred. No. 1.7
); Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 21;
1.7e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fragment #6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

endothelial

Вb Qy

0

```
RESULT
AAY93351
 \begin{array}{c} \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf{X} \times \mathbf
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SSSSSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 12
                                                                                                                            The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UTEM )
(DUPO )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cell apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis methods.
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY93351;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY93351 standard; peptide; 94 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  endothelial
                                                                                              inhibit migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gkkngkhngwkt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₩R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNIV TEMPLE.
DUPONT PHARM CO.
COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSA A S.
    94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39;
    ÃĂ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proliferation; endothelial cell migration; vitronectin
                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; %
100.0%; %
htive 0;
                                                                                                   endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      molecular weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 74; DB 21;
Pred. No. 3.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                   cells
                                                                                                   to vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

Query Match

100.0%;

Score

74;

DВ 21;

Length

94;

RESULT

Ş

0

```
RESULT
AAY93353
    밁
                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 100.0%; Matches 12; Conservative 0;
                                                                                   Matches
                                                                                                                                                                                                                              high molecular weight kiningen. High molecular weight kiningen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kiningen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kiningen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (UTEM )
                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 11; Page 40-41; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (DUPO )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAY93353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The present sequence represents an analogue of the light chain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         45
                                            1 GKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
cn 100.0%;
l Similarity 100.0%;
l2; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ) DUPONT PHARM (
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UNIV TEMPLE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; peptide;
                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26377.
                                            12
    56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179
                                                                                      0
                                                                                   Score 74; DE
Pred. No. 0.0
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pred. No. 0.00011;

mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                     ; DB 21;
, 0.00021;
                                                                                                                           Length 179;
                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

ΧX ΧX

```
RESULT
AAY933
ID AJ
XX
XX
AC AJ
XX
AC AJ
XX
XX
XX
XX
XX
XX
XX
XX
XX
XX
                                                                                                                                                                                        Qy
                                                                                                                                                                 밁
                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                            high molecular weight kininogen. High molecular weight kininogen is a 120 kbg glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI;
            Light chain of human high molecular weight kininogen
                                        04-SEP-2000
                                                                   AAY93342;
                                                                                            AAY93342 standard; protein;
                                                                                                               342
                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 9; Page 38; 41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
endothelial cell proliferation; endothelial cell migration; vitronec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY93349;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY93349 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UTEM )
                                                                                                                                                                 52
                                                                                                                                                                                           سر
                                                                                                                         7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   present sequence represents an analogue of the light chain of human
                                                                                                                                                                gkkngkhngwkt
                                                                                                                                                                                         GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2000-376306/32
                                                                                                                                                                                                                   l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DUPONT PHARM CO. COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOUSA A S
                                                                                                                                                                                                                                                                                      186
                                                                                                                                                                                                                   Conservative
                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                      AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US26377.
                                                                                                                                                                 63
                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cell migration
                                                                                              255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   186
                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                Score 74; DB 21,
Pred. No. 0.00022;
                                                                                              ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A
                                                                                                                                                                                                                                             Length 186;
                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vitronectin
                                                                                                                                                                                                                   Gaps
```

PD OS S XXX

Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;

endothelial

cell

migration;

vitronectin-

n; heavy chain; proliferation; Light chain of human high, molecular weight kininogen fragment

04-SEP-2000

(first entry)

WO200027415-A2

18-MAY-2000

endothelial Synthetic.

Homo sapiens.

AAY93345

AAY93345 standard; peptide;

47

AA

```
RESULT
                                                                         δÃ
                                              В
                                                                                                                                                                                      PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 12
                                                                                                                                                                                                              The present sequence represents the light chain of human high molecul weight kininogen. High molecular weight kininogen is a 120 kpa glycoprotein which binds with high affinity to endotheilal cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (UTEM )
(DUPO )
(COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            endothelial cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (NOUS/)
                                              121 gkkngkhngwkt 132
                                                            1 GKKNGKHNGWKT 12
 œ
                                                                                                         l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UNIV TEMPLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DUPONT PHARM CO COLMAN W R.
                                                                                                                                                                                      255 AA;
                                                                                                    100.0%; ilarity 100.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                   Page 3; 4lpp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                   English.
                                                                                                           0;
                                                                                                         Score 74; DB 21;
Pred. No. 0.00031;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell migration; vitronectin
                                                                                                                                      Length 255;
                                                                                                                                                                                                                                                                                                                                                                                      high molecular
                                                                                                           0;
                                                                                                         Gaps
                                                                                                           0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                   AAY93348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence represents a fragment of the light chain of huma high molecular weight kiningen. It is used to produce compounds of the invention. High molecular weight kiningen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kiningen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kiningen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
(UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
                                                                                09-NOV-1999;
                                                                                                           18-MAY-2000
                                                                                                                                  WO200027415-A2
                                                                                                                                                                         Synthetic
                                                                                                                                                                                                  Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                                                                                                                  04-SEP-2000
                                                                                                                                                                                                                                                                                                           AAY93348;
                                                                                                                                                                                                                                                                                                                                   AAY93348 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-NOV-1999;
                                                       10-NOV-1998;
                                                                                                                                                                                                                                                       Light chain of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UTEM )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Nous/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                                1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                     gkkngkhngwk 47
                                                                                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ) UNIV TEMPLE.
) DUPONT PHARM CO.
') COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₩R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               47 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mousa AS
                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36;
                                                       98US-0107844.
                                                                                                                                                                                                                                                      human high molecular weight kininogen
                                                                                99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 69; DB 21; 
; Pred. No. 0.00032;
                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                 endothelial cell migration;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                      analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR75186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                  A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                           Claim 8;
                                                                                                                                                                                                                                                                                                                                     high molecular weight; kininogen;
                                                                                                                                                                                                                                                                                                                                                               Partial peptide of human HMW kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                          05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75186 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration \cdot
                                                AAR75186
                                                                                                                                                                 (FARH ) HOECHST JAPAN
                                                                                                                                                                                           17-SEP-1993;
                                                                                                                                                                                                                      17-SEP-1993;
                                                                                                                                                                                                                                              28-MAR-1995
                                                                                                                                                                                                                                                                        JP07082172-A
                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (MOUS/) MOUSA A S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                present sequence represents an analogue of the light chain of human
                                                                                                                                          1995-158909/21.
                                                                                                                                                                                                                                                                                                                       treating agent; bovine; growth promotion; fibroblast.
                                                                          Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Page 37; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                           93JP-0230616
                                                                                                                                                                                                                      93JP-0230616
                                                                       8pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                            peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93.2%;
                                                                                                                                                                    XX
                                                                           Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 69; DB 21;
Pred. No. 0.00043;
                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                     fragment; 1.2; 1; 2; partial;
                                                to human kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

0;

human kininogen f agent compsns. ar useful in wound t

fragment

 amino acids is a partial

peptide corresponding

ino acids 458-520. Partial peptides of bovine and in fragments 1.2, 1 and 2, are used in wound treating and act as the active component. The fragments are

nent. The fragments are growth promotion activity

because

```
AAY93347
                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sox
              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                   The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                               Sequence
                                                                                                                                                                                                                                                           Claim 5; Page 37;
                                                                                                                                                                                                                                                                                 Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                         WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human; high molecular weight kininogen; glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY93347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93347 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                      (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W0200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                         10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             plasma kallikrein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         53 gkkngkhngwk 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sapiens.
   11;
                                                                                                                                                                                                                                                                                                                                                  WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                                                                                                                                                           MOUSA A S.
                                                               83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63 AA;
93.2%; Score 69; ilarity 100.0%; Pred. No. Conservative 0; Mismatc!
                                                                                                                                                                                                                                                                                                                                                 Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first
                                                               ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US26377
                                                                                                                                                                                                                                                        41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.2%; Score 69; DB 100.0%; Pred. No. 0.0 tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Å
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             chain;
              DB 21;
0.00058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 16; I
0.00044;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            analogue;
                         Length 83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 63;
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           angiogenesis;
  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT 1
AAR75180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 1
AAR75181
ID AAR7
Вþ
                                                                                                                                                                                                                                                    QY
                                                                                                                                                                                                                                                                                                                                       δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            XOXXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 11
          JP07082172-A
                                 Bos taurus
                                                                                                                   05-DEC-1995
                                                                                                                                                                AAR75180 standard; peptide; 41
                                                                                                                                                                                                                                                                                                                                                                                   AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       05-DEC-1995
                                                                   high molecular weight;
                                                                                          Partial peptide of HMW kininogen fragment
                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                               on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                        useful in
                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; human; growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR75181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Partial peptide of human HMW kininogen fragment 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR75181 standard;
                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                           y Match 93.2%;
Local Similarity 100.0%;
hes 11; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  73
                                                                                                                                                                                                                                                    1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GKKNGKHNGWK 11
                                                                                                                                                                                                                            gkkngkhngwk 83
                                                       treating
                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                        wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                       131 AA;
                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                       agent;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide; 131 AA
                                                       ;; kininogen; fragment; 1.2; 1; 2; partial;
bovine; growth promotion; fibroblast.
                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                           Score 69; DB 16;
Pred. No. 0.00093;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                  Length 131;
                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                             0
```

ð

```
DЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                                                                                                                                                                                                                                                                                                                                     AAR75178
                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ARR75179 is a partial peptide corresponding to bovine kininogen fragment 2, amino acids 456-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compens. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
Claim 4; Page 6; 8pp; Japanese
                     have
                               A wound treating agent contg. a partial peptide of kininogen
                                                                                                                   17-SEP-1993;
                                                                                                                                                              JP07082172-A
                                                                                                                                                                                              Misc-difference
                                                                                                                                                                                                                   Misc-difference
                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                        Bos taurus
                                                                                                                                                                                                                                                                                                     high molecular weight; kininogen; fragment; 1.2; 1; 2; partial;
                                                                                                                                                                                                                                                                                                                           Partial peptide of HMW kininogen fragment 1
                                                                                                                                                                                                                                                                                                                                                  05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                      AAR75178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 6; Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAR-1995
                                                                         (FARH ) HOECHST JAPAN
                                                                                               17-SEP-1993;
                                                                                                                                                                                                                                                                                          wound treating agent; bovine;
                                                                                                                                                                                                                                                                                                                                                                                          AAR75178 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                               31 gknngkhydwr 41
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity les 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GKKNGKHNGWK 11
                     growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                               93JP-0230616
                                                                                                                    93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93JP-0230616
                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                              69
                                                                                                                                                                                  /label= Lys or Arg
                                                                                                                                                                                                       /label= Val or Leu
                                                                                                                                                                                                                            'label= Pro,
                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 62.2%;
63.6%;
                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                          110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                           growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

```
Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    *8888888*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                       29-APR-1999;
06-MAY-1999;
01-OCT-1999;
01-OCT-1999;
                                      The patent discloses a method for preventing or treating a disorder resulting from the release of bradykinin in a mammal which produces a heparin-binding protein (HBP) that binds to a HBP antagonist. This method involves administration of a mammalian HBP antagonist (especially aprotinin) and/or monoclonal antibodies that bind to prekallikrein-H-kininogen complexes in the HBP, to decrease the release of bradykinin in the mammal. The antagonists of HBP (e.g. aprotinin) decrease the permeability of the endothelial cells and are used to prevent or treat disorders resulting from the release of bradykinin such as systemic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR75178 is a partial peptide corresponding to bovine kininogen fragment 1.2, amino acids 387-496. Partial peptides of bovine and human kininogen fragments 1.2, I and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunosuppressive; vasotropic; prevention; treatment; bradykinin; aprotinin; H-kininogen; HK; systemic inflammatory response syndrome; apro-kallikrein; ischaemia reperfusion; anaphylaxis; allograft rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
            inflammatory response syndrome, and/or allograft rejection. The
                                                                                                                                                                                                 Example 2;
                                                                                                                                                                                                                                              Treating systemic inflammatory response syndrome, ischaemia reperfusion, anaphylaxis and allograft rejection by modulating release of bradykinin
                                                                                                                                                                                                                                                                                                                            Flodgaard HJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200066151-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; heparin binding protein; HBP; antiinflammatory;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human HKH20 peptide derived from domain 5 of H-Kininogen (479-498 aa).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAY71879 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on fibroblasts.
                                                                                                                                                                                                                                                                                                                                                          (NOVO ) NOVO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-APR-2000; 2000WO-DK00213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           adult respiratory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100 gknngkhydwr 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110
                                                                                                                                                                                                 Page 39; 75pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                          NORDISK AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                                                                                                                                                                                                       99DK-0000613.
99DK-0001402.
99US-0157384.
                                                                                                                                                                                                                                                                                                                             Lindbom
                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0132748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            distress syndrome; HKH20 peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62.2%;
63.6%;
                                                                                                                                                                                                                                                                                                                            Ļ
                                                                                                                                                                                                                                                                                                                          Bjorn
            They are also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 46; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ₽
                             ischaemia reperfusion, anaphylaxis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
3.1;
              used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
            to treat adult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cardiovascular;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

4)

```
Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                              Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Issued_Patents_AA:*
1: /cgn2_6/ptodata/2
2: /ggn2_6/ptodata/2
3: /cgn2_6/ptodata/2
4: /cgn2_6/ptodata/2
5: /cgn2_6/ptodata/2
6: /cgn2_6/ptodata/2
                                                                                                                                                                                                                                                                                                                                                 Match
July 6, 2001, 09:10:21; Search time 56.74 Seconds (without alignments)
4.260 Million cell updates/sec
                                                                                                                                                                                                                                                                         52.7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       193259 seqs, 20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-437-912-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Copyright
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                 Length
GenCore version 4.5
(c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                  DВ
                                                                                                                                                                    US-08-477-451-4

US-09-203-716-2

5514582-43

US-07-906-983-2

US-09-203-716-1

US-08-183-214-12

US-07-783-706-2

US-08-445-342A-2

US-09-066-481-2
                                                                                 PCT-US92-09124-2
US-08-21-817-14
US-08-45-4-439-14
PCT-US94-10487-14
US-08-414-926A-25
US-08-246-922-25
                                                                                                                                                                                                                                                                                  US-08-594-031-100
US-08-594-031-102
US-08-117-952-787
US-08-117-952-788
                                 US-08-414-926A-25

US-08-926-922-25

US-09-253-682-25

US-08-690-090A-8

US-08-816-346-44

US-08-816-346-40
                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193259
                                                                                                                                                                                                                                                                                   Sequence 100, App
Sequence 102, App
Sequence 787, App
Sequence 788, App
                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                                               Patent No.
                                                                                              Sequence
Sequence
                                                                                                                                                                                                                                              Sequence 4, Appli
Sequence 2, Appli
atent No. 5514582
          Sequence
                     Sequence
                                  Sequence
                                              Sequence
                                                           Sequence
                                                                      Sequence
                                                                                   Sequence
                                                                                                                       Sequence
                                                                                                                                Sequence
                                                                                                                                              Sequence
                                                                                                                                                          Sequence
                                                                                                                                                                       Sequence
                                                                                                                                                                                   Sequence
                                                                                                                                                                                              Sequence
                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                   Sequence
                                                                                            14, Appl
14, Appl
14, Appl
25, Appl
25, Appl
                                                                                                                                                                                                                    2, Appli
1, Appli
                                                                     25, Appl
8, Appli
                                                                                                                                                                                 2, Appli
2, Appli
                                                                                                                                                         Appl
Appl
Appl
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28
34	34	34	34	34	34	35	35	35	35.5	35.5	35.5	36	36	36	36	36	36
45.9	45.9	45.9	45.9	45.9	45.9	47.3	47.3	47.3	48.0	48.0		48.6					48.6
212	212	212	32	32	32	3898	615	155	1507	367	367	3969	952	952	952	951	. 951
ω	r	٢	Н	$\vdash$	μ	4	4	w	σ	w	N	4	4	4	Ν	4	4
US-09-103-079-21	US-08-462-169B-21	US-08-462-965A-2	US-08-190-802A-172	US-08-190-802A-128	US-08-190-802A-69	US-08-750-717-2	US-08-989-299-11	US-09-203-716-4	5268270-2	US-09-107-755-17	US-08-655-704B-17	US-08-061-376-5	US-09-335-411-4	US-08-816-346-4	US-08-788-674-5	US-09-335-411-58	US-08-816-346-58
Sequence 21, Appl	Sequence 21, Appl	Sequence 2, Appli	Sequence 172, App	٣	Sequence 69, Appl			Sequence 4, Appli	Patent No. 5268270	Sequence 17, Appl	Sequence 17, Appl	Sequence 5, Appli	Sequence 4, Appli	Sequence 4, Appli	Sequence 5, Appli	Sequence 58, Appl	Sequence 58, Appl

## ALIGNMENTS

US-08-594-031-100

```
; FRAGMENT TYPE:
; ORIGINAL SOURCE:
US-08-594-031-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5783182
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 100, Application US/08594031 Patent No. 5783182
                                                                                                                                                     INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 376 amino acids
                                                             STRANDEDNESS:
TOPOLOGY: line
MOLECULE TYPE: F
HYPOTHETICAL: NO
                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 0A TELECOMMUNICATION INFORMATION: TELEPHONE: 202-639-7700
                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/006,838
FILING DATE: 16-NOV-1995
ATTORNEY/AGENT INFORMATION:
NAME: Remenick, James
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 20004-2400
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: METHOD FOR IDENTIFYING METASTATIC SEQUENCES NUMBER OF SEQUENCES: 175
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
                                                  ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: 30-JAN CLASSIFICATION: 435
                                                                                                                                          TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
                                                                                                                                                                                                                          TELEFAX: 202-639-7890
                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 1299 Penr
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: BAKER & BOTTS, L.L.P. STREET: 1299 Pennsylvania Avenue, N.W.
                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                 single
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THOMPSON,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IBM Compatible
                                                               . peptide
                                    N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                     30-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                       US/08/594,031
                                                                                                                                                                                                                                                                                              36,902
                                                                                                                                                                                                                                                                                0A146-0110
```

```
밁
                                                                                                                                                           δÃ
                                                                          US-08-117-952-787
 ; Sequence 787, Applicat:
; Patent No. 5851760
; GENERAL INFORMATION:
   APPLICANT: Evans, (
   APPLICANT: Smith, )
                                                                                         RESULT
                                                                                                                                                                                                                                                                    US-08-594-031-102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-594-031-102
                                                                                                                                                                                            Query Match
Best Local S
Matches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 102, Application US/08594031 Patent No. 5783182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 62.9
Matches 5; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                    ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                               HYPOTHETICAL: NO ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 376 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 202-639-7700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/006,838
FILING DATE: 16-NOV-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: THOMPSON, Timothy C:
TITLE OF INVENTION: METHOD FOR IDENTIFYING METASTATIC SEQUENCES NUMBER OF SEQUENCES: 175
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                  FRAGMENT TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                   114 DGKHHGWR 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        114 DGKHHGWR 121
                                                                                                                                                                                            Local Similarity hes 5; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-639-7890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: Remenick, James REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE:
                                                                                                                                                              4 NGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 NGKHNGWK 11
                                            87, Application US/08117952
5851760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20004-2400
                                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Washington
                                                                                                                                                                                                                                                                                                                                                                                                 376 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1299 Pennsylvania Avenue, N.W.
Evans, Glen A.
Smith, Michael W.
                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BAKER & BOTTS, L.L.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IBM Compatible
                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                  N-terminal
                                                                                                                                                                                                                                                                                                                                           peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-JAN-1996
                                                                                                                                                                                                          54.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/08/594,031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36,902
                                                                                                                                                                                                                                                                                                                                                                                                                                     102:
                                                                                                                                                                                                        Score 40;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0A146-0110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 33;
                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                      Length 376;
                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-117-952-788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-117-952-787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 52.7%;
Best Local Similarity 53.3%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: 619-546-9392 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08,
FILING DATE: 15-JUN-1993
ATTORNEY/AGENT INFORMATION:
NAME: Reiter Stephen E.
REGISTRATION NUMBER: 31,11
REFERENCE/DOCKET NUMBER: 1
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NERAL INFORMATION.

APPLICANT: Evans, Glen A.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, Michael W.

APPLICANT: Smith, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/117,95
FILING DATE: 07-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE:
FRAGMENT TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 435 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 7
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                   STREET: 444 South
CITY: Los Angeles
STATE: CA
                                                                                                                                                                                                                                       COUNTRY: UZIP: 90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10 GKKNSPHEGKRIWWK 24
                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: UZIP: 90071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 444 South
CITY: Los Angeles
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GKKNGKHNG----WK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 788, Application US/08117952
5. 5851760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3E: Pretty, Schroeder, Brueggemann & Clark
444 South Flower Street, Suite 2000
                                                                                                                                                                                                                                                                                                                                                                                      E: Pretty, Schroeder, Bru
444 South Flower Street,
                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619-546-9392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   619-546-4737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        METHOD FOR GENERATION OF SEQUENCE SAMPLED MAPS OF COMPLEX GENOMES
                                                                                                                                                                                                                                                                                                                                                                                          Schroeder, Brueggemann & Clark
Flower Street, Suite 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . US 08/078,471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US/08/117,952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           P41 9423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 60;
```

FILING DATE: APPLICATION NUMBER:

07-SEP-1993

US/08/117,952

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: amino acid
; TOPOLCGY: unknown
; MOLECULE TYPE: prote
; FRAGMENT TYPE: inter
US-08-117-952-788
                                                                       TOPOLOGY: linear; MOLECULE TYPE: protein US-08-477-451-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-477-451-4
                                                                                                                                                                                                                   COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPAILIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/477,451
FILING DATE: 07-JUN-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: MCClung, Barbara G.
REGISTRATION NUMBER: 33,113
REFERENCE/DOCKET NUMBER: 0335.002
TELEPHONE: 510-601-2708
TELEPHONE: 510-601-2708
TELEPAN: 510-655-3542
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 4, Application US/08477451 Patent No. 5928865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
TELEPHONE: 619-546-4737
TELEPAX: 619-546-9392
TRIEFFAX: 619-546-9392
INFORMATION FOR SEQ ID NO: 788:
                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 4: SEQUENCE CHARACTERISTICS: LENGTH: 3177 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Chiron Corporation
STREET: 4560 Horton Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Covacci, Antonello TITLE OF INVENTION: Helicobact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE: 15-JUN-1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity hes 8; Conserv
                                                                                                                            TYPE: amino acid
STRANDEDNESS: Si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10 GKKNSPHEGKLIWWK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 31,192
REFERENCE/DOCKET NUMBER: P41 9423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GKKNGKHNG----WK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Reiter, Stephen E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US 08/078,471 FILING DATE: 15-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94608-2916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          internal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                              single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Helicobacter Pylori Cagi Region
52.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52.7%;
53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46
Score 39; DB 2;
Pred. No. 4.3e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :
```

```
APPLICANT: Lima, Walter F.

APPLICANT: Lima, Walter F.

APPLICANT: Lima, Walter F.

APPLICANT: Wu, Hongjiang

FIIE OF INVENTION: Human RNase H Compositions and Uses Thereof

FILE REFERENCE: ISPH-033

CURRENT APPLICATION NUMBER: US/09/203,716

CURRENT FILING DATE: 1998-12-02

EARLIER APPLICATION NUMBER: 60/067,458

EARLIER FILING DATE: 1997-12-04

NUMBER OF SEQ ID NOS: 12

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 2

LENGTH: 293
                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 7
5514582-43
Вb
                                         Query Match
Best Local Similarity
"~+~hes 5; Conserv:
                                                                                                                                5514582-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
October 6; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; LENGTH: 293
; TYPE: PRT
; ORGANISM: Gallus sp.
US-09-203-716-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
US-09-203-716-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δã.
                                                                                                                                                                                                                                                                                                                                                                 ;Patent No. 5514582
; APPLICANT: CAPON, DANIEL J.;LASKY, LAURENCE A.; TITLE OF INVENTION: RECOMBINANT DNA ENCODING HYBRID;IMMUNOGLOBULINS
                                                                                                                                                            SEQ ID NO:43:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/09203716 Patent No. 6001653
                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/
FILING DATE: 21-JAN-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                          APPLICATION NUMBER: 986,931
FILING DATE: 08 -DEC-1992
APPLICATION NUMBER: 808,122
FILING DATE: 16-DEC-1991
APPLICATION NUMBER: 440,625
FILING DATE: 22-NOV-1989
APPLICATION NUMBER: 315,015
FILING DATE: 23-FEB-1989
                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              230 ENWKTNGWRT 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              910 KKNNRYNGYK 919
75 NGRHNGYE 82
                                                                                                                                              LENGTH: 126
                          4 NGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 KNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 KKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                     50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51.4%;
                                                                                                                                                                                                                                                                                                                           US/08/185,670
                                                                    Score 37;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 38;
Pred. No.
                                                      core 37; DB red. No. 32; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 3;
                                                                                     6;
                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 293;
                                                                                  Length 126;
                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

RESULT

```
; TYPE: PRT ; ORGANISM: Homo sapiens US-09-203-716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                            US-09-203-716-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: protein US-07-906-983-2
                                                                      SOFTWARE: PatentIn Ver. 2.0 SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/09203716 Patent No. 6001653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                        APPLICANT: Lima, Walter F.
APPLICANT: Wu, Hongjiang
TITLE OF INVENTION: Human RNase H Compositions and Uses Thereof
FILE REFERENCE: ISPH-033
CURRENT APPLICATION NUMBER: US/09/203,716
CURRENT FILING DATE: 1998-12-02
EARLIER APPLICATION NUMBER: 60/67,458
EARLIER FILING DATE: 1997-12-04
NUMBER OF SEQ ID NOS: 12
                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No.
                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Kotwal, Gliis...
APPLICANT: Moss, Bernard
TITLE OF INVENTION: Synthetic, Anti-Complement Protein and
TITLE OF INVENTION: the Gene Encoding Same
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend
STREET: One Market Plaza, Steuart Tower, Suite 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 2:
                                                     LENGTH: 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 94105

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 415-543-9600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: Weber, Kenneth A.
REGISTRATION NUMBER: 31,677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                     156 NGRHNGYE 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US FILING DATE: 19920701 CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 NGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4: 263 amino acids
AMINO ACID
                                                                                                                                                                                                                                                                                  Crooke, Stanley T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/07906983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           415-543-5043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PatentIn Release #1.0, Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 us/07/906,983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15280-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 37;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
밁
                                                        US-07-783-706-2
                                                                        RESULT 11
                                                                                                                                                                                                                                                          ; MOLECULE TYPE: protein US-08-183-214-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
US-08-183-214-12
              Sequence 2, Application US/07783706 Patent No. 5714376 GENERAL INFORMATION:
                                                                                                                                                                                 Matches
                                                                                                                                                                               Best Local Similarity
Matches 6; Conser
                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 12, Appi
Patent No. 571681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                            TELEFAX: 415-543-5043
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 415-543-9600
                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PAPPLICATION DATA:
PAPPLICATION NUMBER: US 07/888,231
FILING DATE: 22-MAY-1992
ATTORNEY/AGENT INFORMATION:
NAME: Weber, Kenneth A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARB: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/183,214
FILING DATE: 14-JAN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
 PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     226 KKNGWKT 232
                                                                                                                       99 KPGKPNGWR 107
                                                                                                                                                                                                                                                                                          TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 31,677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U
ZIP: 94105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: One Market I
                                                                                                                                        3 KNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6 KHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                    Weber, Kenneth A
                                                                                                                                                                                                                                                                                                     : 345 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/08183214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             E: Townsend and Townsend One Market Plaza, Steuart Street Tower
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
Sasisekharan, Ramnath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stanley, Sally J.
Nightingale, Maria S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Takada, Tatsuyuki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Murtagh, Jr.,
Monaco, Lucia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Moss,
                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADP-RIBOSYLARGININE HYDROLASES
                                                                                                                                                                                               50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50.0%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLONES ENCODING MAMMALIAN
                                                                                                                                                                                                                                                                                                                                                                                                            15280-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 37; Pred. No.
                                                                                                                                                                                               Score 37;
Pred. No.
                                                                                                                                                                                  Mismatches
                                                                                                                                                                                               DB 1;
90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
••
                                                                                                                                                                                                             Length 345;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 286;
                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Moreman, Kelley

```
Query Match
Best Local Similarity
"~+~hes 6; Conserv?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 12
US-08-445-342A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; ORGANISM: Flavobacterium heparinum US-07-783-706-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/783,706
FILING DATE: 19911023
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patrea L.
REGISTRATION NUMBER: 31,284
REFERENCE/DOCKET NUMBER: MIT5546
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-572-6568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/08445342A Patent No. 5830726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 404-572-6555
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 384 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTERISTICS:
ANINO ACID
STRANDEDNESS: Sir
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TOPOLOGY: 1:
TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FRAGMENT TYPE: ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HYPOTHETICAL:
ANTI-SENSE:
                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                 NPPLICANT: Langer, Robert, S.
NITLE OF INVENITION: The Heparinase gene from Flavobacterium
NITLE OF INVENITION: Heparinum
                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         220 GKPNGWK 226
                                                                      CITY: Atlanta
STATE: GA
                                 COUNTRY:
                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Atlanta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5 GKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30303
30309-3450
                                                                  GA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Georgia
7: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Kilpatrick & Cody
100 Peachtree Street, Suite 3100
                                                                                                                                     2800 One Atlantic Center, 1201 West Peachtree Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Langer, Robert S.
                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                      Moreman, Kelley
Cooney, Charles, I.
                                                                                                                                                                                                                                                                                                                                                                                        Zimmerman, Joseph, J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sasisekharan, Ramnath
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    YES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cooney, Charles L.
                                                                                                                                                                                 Patrea L. Pabst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50.0%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Heparinum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The Heparinase Gene from Flavobacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 37; DB 1; Length 384; Pred. No. 1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

```
; SEQ ID NO 2
LENGTH: 384
; TYPE: PRT
; ORGANISM: Flavobacterium Heparinum
US-09-066-481-2
멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
""" 6; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
US-09-066-481-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-445-342A-2
                                                                    Best Local Similarity
Matches 6; Conser
                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Application US/09066481B Patent No. 6217863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL
                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/066,481B
CURRENT FILING DATE: 1999-01-19
EARLIER APPLICATION NUMBER: US 60/008,069
EARLIER FILING DATE: 1995-10-30
NUMBER OF SEQ ID NOS: 38
                                                                                                                                                                                                                                                                                                                                                          JENERAL INFORMATION:
APPLICANT: GODAVARTI, RAMNATHAN
APPLICANT: SASISEKHARAN, RAMNATH
APPLICANT: ERNST, STEFFAN
APPLICANT: GANESH VENKATARAMAN
APPLICANT: COONEY, CHARLES L
APPLICANT: LANGER, ROBERT
TITLE OF INVENTION: RATIONALLY DESIGNED POLYSACCHARIDE
TITLE OF INVENTION: LYASES DERIVED FROM HEPARINASE I
FILE REFERENCE: M0556/7038/HCL
                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 38 SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (404) 873-87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/783,706
FILING DATE: 23-OCT-1991
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM CC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 384 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patrea L.
REGISTRATION NUMBER: 31,284
REFERENCE/DOCKET NUMBER: MIT 5546 div
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION: TELEPHONE: (404) 873-8794
220 GKPNGWK 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       220 GKPNGWK 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                5 GKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5 GKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4) 8/-
) 873-8795
NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      single
                                                                                       50.0%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/08/445,342A

 Mismatches

                                                                                   Score 37;
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 37; DB 2;
Pred. No. 1e+02;
                                                                      Mismatches
                                                                                     DB 4;
le+02;
                                                                                                      Length 384;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

0

```
밁
                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
...thes 6; Conserve
                                                                                                                                                                                                                                                       RESULT 15
                                                                                                                                                                                                                                       US-08-221-817-14
                                                                                                                                                                                                                                                                                                                                                                                                                                              ; ORGANISM:
PCT-US92-09124-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 14
PCT-US92-09124-2
                                                                                                                                                                                       Patent No. 5532151
GENERAL INFORMATION:
                                                                                                                                                                                                           Sequence 14, Application US/08221817 Patent No. 5532151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application PC/TUS9209124
GENERAL INFORMATION:
APPLICANT: Massachusetts Institute, of Technology
TITLE OF INVENTION: The Heparinase Gene from Flavobacterium
TITLE OF INVENTION: Heparinum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 404-815-6555
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                           APPLICANT:
APPLICANT:
                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FRAGMENT TYPE:
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HYPOTHETICAL: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: MI
TELECOMMUNICATION INFORMATION:
TELEPHONE: 404-815-6508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Pabst, Patrea L.
REGISTRATION NUMBER: 31,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                              CORRESPONDENCE ADDRESS:
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                               IUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                     220 GKPNGWK 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: POFILING DATE: 19921022 CLASSIFICATION:
                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Atlanta
STATE: Georgia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                  5 GKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30309-4530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Georgia
Y: US
                           E: Borun 6300 Sears Tower, 233 South Wacker Drive
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1100 Peachtree Street, Suite 2800
                                                                                                                         Chantry, David
Gray, Patrick M.
Hoekstra, Merle F.
VENTION: A.No. 5532151el G Protein-Coupled Receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Flavobacterium heparinum
                                                          Marshall, O'Toole, Gerstein, Murray &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kilpatrick & Cody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                             Kinase GRK6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT/US92/09124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31,284
                                                                                                                                                                                                                                                                                                                                                              Score 37; DB Pred. No. 1e+0 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MIT5546
                                                                                                                                                                                                                                                                                                                                                                               DB 5;
1e+02;
                                                                                                                                                                                                                                                                                                                                                                                             Length 384;
                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                0;
```

```
Search completed: July Job time: 188 sec
                                                                                     밁
                                                                                                                 Qy
                                                                                                                                                                                                                                    ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-221-817-14
                                                                                                                                                      Matches
                                                                                                                                                                   Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (312) 474-63
TELEFAX: (312) 474-0448
TELEX: 25-3856
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 590 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 31
TELECOMMUNICATION INFORMATION:
TELEPHONE: (312) 474-6300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/1:
FILING DATE: 17 SEP 1993
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                      Local Similarity hes 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US/08/221,817 FILING DATE: CLASSIFICATION: 435
                                                                                     21 GKRKGKSKKWK 31
                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: No. 5532151and, Greta REGISTRATION NUMBER: 35,302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                   1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60606
                                                                                                                                                      Conservative
                 6,
                                                                                                                                                                   54.5%;
                 2001, 09:10:22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      08/123,932
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Greta
                                                                                                                                                                                                                                                                                                                                      14:
                                                                                                                                                                                                                                                                                                                                                                                                                      31981
                                                                                                                                                                   Score 37; DB 1;
Pred. No. 1.6e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ħ
                                                                                                                                                      Mismatches
                                                                                                                                                                                   Length 590;
                                                                                                                                                    Indels
                                                                                                                                                    0
                                                                                                                                                  Gaps
```

0,

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                               Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM protein - protein search, using
                                                                                                                                                                                                                                                                                                                     Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                   seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                   length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                           PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                           Query
Match Length
July 6, 2001, 09:17:59; Search time 73.59 Seconds (without alignments)
12.421 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               219241 seqs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-437-912-4
74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                          pir1:*
pir2:*
pir3:*
pir4:*
DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gapext 0.5
         KGBHOH2
T35064
G71333
T49422
T11622
T116822
T116822
T116923
T11622
T116925
T11691
T81807
H81061
F81807
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
H81061
                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                          KGHUHI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sw model
                                                                                                                                                                                                                                                                                                      SUM
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
37	37	37	37	37	37	37	37	37	37.5	37.5	37.5	38	38	38	38
50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.7	50.7	50.7	51.4	51.4	51.4	51.4
383	357	312	298	263	224	194	174	102	891	359	299	1534	861	235	221
N	N	N	ν	1	N	2	N	1	N	N	N	N	N	N	Ν
T21453	B47411	T37922	A84100	WMVZSP	S71749	T16556	S73219	S78274	T40137	A86804	T47917	S59604	B84963	T35324	T45044
hypothetical prote	ADPribosylarginine	hypothetical prote	cell-division prot	apolipoprotein H h	DCL protein precur	hypothetical prote	ribosomal protein	ribosomal protein	hypothetical serin	prophage pi3 prote	probable transcrip	DNA (cytosine-5-)-	DNA topoisomerase	probable ribonucle	hypothetical prote

## ALIGNMENTS

RESULT KGHUH1

17110000001011 1101000	
A: RELEXENCE INHIBET: AZ/033	7 ribonnolease H - D
sequence of the fight chain of	7 SEPARATE PROCE
in Kinins IV, Greenbaum, Lim., and Margolius, H.S., ed., pp. 85-89, Plenum Press, New	/ G protein-coupled
F.; Henschen, A.; Mue	glycylpeptide N-te
A; Residues: 'Z', 20-380 < KEL1>	9 prophage ps2 prote
A; Molecule type: protein	9 . variant-specific s
A; Accession: A24871	R retrovirus-related
A; Reference number: A24871; MUID:86108361	1 aconitate hydratas
A; Title: Completion of the primary structure of human high-molecular-mass kininogen.	1 hypothetical 67K p
Eur. J. Biochem. 154, 471-478, 1986	6 cell division prot
R;Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W.	0 ribosomal protein
A; Note: the bradykinin sequence preceding the light chain sequence was not determined	4 hypothetical prote
A; Residues: 379-644 <lot></lot>	
A; Molecule type: protein	0 hypothetical prote
A; Accession: A91153	hypothetical prote
	0 probable capsule p
A; Title: The amino acid sequence of the light chain of human high-molecular-mass kini	5 nickase taxC - Esc
Eur. J. Biochem. 152, 307-314, 1985	3 mstl01-1 protein -
R; Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl, W.	1 ribonuclease HI NM
A; Note: differences are due to known cloning artifacts	7 ribonuclease H (EC
A; Residues: 'ANSM', 253-377 <aue></aue>	1 . cca3 protein - rat
A; Molecule type: mRNA	<pre>probable transcrip</pre>
A; Accession: S32422	RAD57 related prot
A; Reference number: S32422; MUID:93223854	3 probable ribonucle
A; Title: Cloning, expression and characterization of human kininogen domain 3.	4 probable integral
FEBS Lett. 321, 93-97, 1993	l kininogen, HMW I p
R; Auerswald, E.A.; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I.	kininogen, HMW II
A;Cross-references: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852	kininogen, HMW pre
A; Residues: 1-592, 'I', 594-644 < TAK>	
A; Molecule type: mRNA	Description
A; Accession: A25276	
A; Title: Cloning and sequence analysis of cDNAs for human high molecular weight and l	MMARIES
J. Biol. Chem. 260, 8601-8609, 1985	
R: Takagaki, Y.: Kitamura, N.: Nakanishi, S.	e total score distribution.
A:Cross-references: GB:KO2566: NTD:g177889	he score of the result being printed.
A; MOLECULE LYPE: MKNA A: DOC:4:00. 1-200 COURY	
A; Accession: A01279	
A; Reference number: A90490; MUID:85122621	
A; Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide	
Biochemistry 23, 5691-5697, 1984	
R;Ohkubo, I.; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M.	
C; Accession: A01279; A25276; S32422; A91153; A24871; A27899; A27699; A31905; A34030;	-
C:Date: 28 May-1986 #sequence revision 28-May-1986 #text change 08-Dec-2000	aries
Cigneries Home ganiens (man)	
n, nateriace names arbita / circut processase similaricos, preproximinosen II. low molecular N.Containes haddykinin /kallidin IV. HMW kininogen I. HMW kininogen II. low molecular	
N.Alternate manes: alpha-2-thiel mented; - numan	
Kinisonon und procuron (relidated) - human	

38.5 38.5 38 38 38

```
A; Molecule type: protein
A; Residues: 379-389, 'K',390-407,'Q',409-644 <KEL2>
R; Mindrolu, T.; Carretero, O.A.; Proud, D.; Walz, D.; Scicl Blochem. Biophys. Res. Commun. 152, 519-526, 1988
A; Title: A new kinin moiety in human plasma kininogens. A; Reference number: A27699; MUID:88209021
A; Accession: A27699
A; Molecule type: protein
A; Residues: 380-389 <MINN-
R; Maeda, H.; Matsumura, Y.; Kato, H.
J. Biol. Chem. 263, 16051-16054, 1988
A; Title: Purification and identification of [hydroxyproly A; MID:89034061]
                                                                                                                                                                                                                                                                                                                      A; Accession Component A; Accession A; Accession A; Residues: 450-452, 'X', 454, 'X', 456 <LIT> A; Residues: 450-452, 'X', 454, 'X', 456 <LIT> R; Straczek, J.; Maachi, F.; le Nguyen, D.; le FEBS Lett. 373, 207-211, 1995 A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification from human plasma of A; Fitle: Purification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Lenarcic, B.; Krasovec, M.; Ritonja, A.; Olafsson, I.; Turk, V. FEBS Lett. 280, 211-215, 1991
A;Title: Inactivation of human cystatin C and kininogen by human cathepsin A;Reference number: S14303; MUID:91192133
A;Accession: S14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein
A; Residues: 380-389 <58.5>
R; Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok,
Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A; Title: Human cathepsin B and cysteine proteinase inhibitors
                                    R;Kitamura, N.; Kitagawa, H.; Fukushima, D.; Takagaki, Y
J. Biol. Chem. 260, 86.10-8617, 1985
A;Title: Structural organization of the human kininogen
A;Reference number: A92545; MUID:85234583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Residues: 264-359, 'N', 361-375 <LEN2>
R; Little, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A; Title: Human mast cell tryptase isoforms: separation
A; Reference number: S55239; MUID:95251593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental source: urine A; Note: this peptide had Pro-383 modified to 4-hydroxyproline A; Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: Isolation and identification of hydroxyproline analogues of bradykinin A;Reference number: A61495; MUID:88211869
A;Accession: A61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein
A; Residues: 1-19;189-192;310-314;381-389 < LENI>
R; Kato, H.; Matsumura, Y.; Maeda, H.
FEBS Lett. 232, 252-254, 1988
                                                                                                                                                                                                             A; Molecule type: protein A; Residues: 431-434 <STR>
                                                                                                                                                                                                                                                                                               A; Reference number: S68059;
A; Accession: S68059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: protein
A; Residues: 380-389 <KAT1>
A; Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A; Accession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Residues: 381-389 <MAE>
R;Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A;Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin released from
A; Contents: annotation; gene organization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein A; Residues: 380-389 < KAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: protein A; Residues: 381-389 < KAT2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Note: this peptide had Pro-383 modified A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A34030; A; Accession: A34030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ype: protein
381-389 <MAE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      $02482; MUID:89076517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MUID:88106632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to 4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                          D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Becchi, M.; Heulin, M.H.; Nabet,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Walz, D.; Scicli,
, 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [hydroxyprolyl(3)]bradykinin in ascitic
                                                                                                                                                               Takagaki, Y.; Miyata,
                                                                                                                                                                                                                                                                                                                                                                                 tetrapeptide that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and examination of substrate-spec
                                                                             gene and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M.; Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (CPIs) in inflammatory
                                                                                                                                                                                                                                                                                                                                                                                 potentiates
                                                                                  model for
                                                                                                                                                               T.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <
                                                                                                                                                                                                                                                                                                                                                                                          insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P.;
                                                                             its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in
                                                                             evolut.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      humaı
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         flui
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ano
```

```
C;Superfamily; kininogen; cystatin homology
C;Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d
F;1-18/Domain: signal sequence #status experimental <SIG>
F;19-644/Product: HMW kininogen I (prokininogen) #status experimental <MAT1>
F;19-379,390-644/Product: HMW kininogen II #status experimental <MAT2>
F;19-379/Domain: HMW kininogen heavy chain #status experimental <HCH>
F;19-379/Domain: cystatin homology <CY1>
F;142-253/Domain: cystatin homology <CY2>
F;142-253/Domain: cystatin homology <CY3>
F;264-375/Domain: cystatin homology <CY3>
F;381-389/Product: lysyl-bradykinin (kallidin I) #status experimental <HCH>
F;381-389/Product: lysyl-bradykinin (kallidin I) #status experimental <CH>
F;381-389/Product: lysyl-bradykinin (kallidin I) #status experimental <CH>
F;421-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F;431-434/Product: low molecular weight growth promoting factor #status experimental
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experi
F;28-614,83-94,107-126,142-145,206-218,229-248,264-267,328-300,351-370/Disulfide bond
F;48/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;39-380/Cleavage site: Met-Lys (kallikrein) #status experimental
F;39-390/Cleavage site: carbohydrate (Asn) (covalent) #status experimental
F;39-390/Cleavage site: Agr-Ser (kallikrein) #status experimental
F;401,533,542,546,557,571,593,628/Binding site: carbohydrate (Thr) (covalent) #status
F;577/Binding site: carbohydrate (Ser) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Bos primigenius taurus (cattle) (c;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change C;Accession: A01282; A91923; A91941; A91938; B29559 R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nature 305, 545-549, 1983
                                                                   A;Title: Studies on the structure of bovine A;Reference number: A91923; MUID:70180420 A;Accession: A91923
                                                                                                                                                                                                                                                                                                                                                          A;Title: A single gene for bovine high molecular weight and low molecular weight kini A;Reference number: A93317; MUID:84014106
A;Accession: A01282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GDB:125256; OMIM:228960
A;Map position: 3q27-3q27
A;Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Comment: The HMW kininogen precursor and the LMW form are produced from the same ge C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of C;Comment: The glycine/histldine/lysine-rich region of HMW kininogen light chain is i C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator xyproline residue is present in the kininogen prior to the release of bradykinin.
A; Molecule type: protein
A; Residues: 376-391 <KAT>
                                                                                                                                                                                 R;Kato, H.;
J. Biochem.
                                                                                                                                                                                                                                                     A;Cross-references: GB:V01492; GB:K01758;
                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-619 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Title: Structural features of plasma kinins and kininogens A;Reference number: A91455; MUID:90255622
A;Contents: annotation; bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: GDB: KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         510 GKKNGKHNGWKT 521
                                                                                                                                                                             H.; Nagasawa, S.; Suzuki,
hem. 67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HMW II precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cn 100.0%;
1 Similarity 100.0%;
12; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27, 52-57, 1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 74; DE
Pred. No. 0.0
0; Mismatches
                                                                                                                                                                                                                                                     NID: 9493; PIDN: CAA24736.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
. 0.00056;
. 0;
                                                                                                                                       kininogen:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T.; Nawa, H.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 644
                                                                                                                                           cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-Jun-1999
                                                                                                                                           of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                           disulfide bonds
                                                                                                                                                                                                                                                 PID:9494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

Kato, H.; Iwanaga,

s.;

Suzuki,

```
C;Superfamily; kininogen; cystatin homology
C;Reywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; dupl
F;1-18/Domain: signal sequence *status predicted <SIG>
F;19-619/Product: HMW kininogen II *status predicted <MAT>
F;19-19/Tomain: cystatin homology <CY1>
F;14-1252/Domain: cystatin homology <CY2>
F;261-372/Domain: cystatin homology <CY3>
F;377-386/Product: Hysyl-bradykinin (kallidin II) *status experimental <KBDY>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;387-619/Product: bradykinin (kallidin I) *status experimental <CH>
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) *status experimental F;27-589,82-93,106-125,141-144,205-217,228-247,261-264,325-337,348-367/Disulfide bonds: F;387,188,169,204-280/Binding site: carbohydrate (Asn) (covalent) *status absent F;376-377/Cleavage site: Met-Lys (kallikrein) *status experimental F;386-387/Cleavage site: Met-Lys (kallikrein) *status experimental F;386-387/Cleavage site: Arg-Ser (kallikrein) *status experimental F;396,400,404,510/Binding site: carbohydrate (Ser) (covalent) *status experimental F;396,400,404,510/Binding site: carbohydrate (Ser) (covalent) *status experimental F;397,398,518,522,534,546,551,568/Binding site: carbohydrate (Ser) (covalent) *status experimental F;397,398,518,522,534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Comment: The HMW kininogen precursor is produced from the same gene as the LMW form as C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of the C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is important: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator, is xyproline residue is present in the kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, J. Biol. Chem. 262, 2768-2779, 1987
A;Title: Bovine high molecular weight kininogen. A;Reference number: A92627; MUID:87137530
A;Accession: B29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Studies on the primary structure of bovine high-molecular-weight kininogen. A;Reference number: A91938; MUID:75170265
A;Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Residues: 387-455 <HAN>
A; Note: 398-Pro, 401-Val, and 455-Lys
R; Han, Y.N.; Komiya, M.; Iwanaga, S.;
J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Title: Disulfide bonds in bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Primary sta
A; Reference number:
밁
                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R; Sueyoshi, T.; Mi
Seikagaku 56, 808,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Lottspeich, F.; Kellermann, J.; H
Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Note: article in Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Reference number: A94300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 'Z', 20-104,'E', 106-256,'XX', 257-376
                                                                                                                                                                                                              Query Match
486
                                                                                                                                                                              Local
                                                                     1 GKKNGKHNGWKT 12
GKNNGKHYDWRT 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         456-496 <HA2>
                                                                                                                                           8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A91941;
                                                                                                                                                                                  66
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of bovine plasma high-molecular-weight kininogen. The MUID:76260155
                                                                                                                                                                              .78;
                                                                                                                                        Score 51; DB Pred. No. 2;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                  (kallikrein) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Henschen, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Η.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The
                                                                                                                                           Ψ
                                                                                                                                                                                                                 Length 619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    amino acid sequence, positions of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hayashida, H.;
                                                                                                                                                                                                                                                                                                                              experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B.; Muller-Esterl,
                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Miyata,
                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      T.;
                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Iwanaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   kinino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽
```

RESULT

```
A; Accession. A; Accession. A; Accession. A; Accession. A; Molecule type: protein
A; Residues: 458-498 <HAND
A; Residues: 458-498 <HAND
R; Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, H.; J.
J. Biol. Chem. 262, 2768-2779, 1987
A; Title: Bovine high molecular weight kininogen. The
                                                                                                     F:141-252/Domain: cystatin homology <CY2>
F:263-374/Domain: cystatin homology <CY3>
F:379-388/Product: lysyl-bradykinin (kallidin II) #status experimental <KBDY>
F:380-388/Product: bradykinin (kallidin I) #status experimental <BDY>
F:380-388/Product: bradykinin (kallidin I) #status experimental <LCH>
F:380-388/Product: hradykinin (kallidin I) #status experimental <LCH>
F:380-388/Product: hradykininogen I light chain #status experimental <LCH>
F:39/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimental F:27-591,82-93,106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide F:87,168,169,204/Binding site: carbohydrate (Asn) (covalent) #status experimental F:136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental F:197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental F:378-379/Cleavage site: Met-Lys (kallikrain) #status experimental F:378-379/Cleavage site: Met-Lys (kallikrain) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Note: article in Japanese C:Comment: The HMW kininogen precursor is produced from the same gene as the LMW form C:Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation of C:Comment: The glycine/histldine/lysine-rich region of HMW kininogen light chain is i C:Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator xyproline residue is present in the kininogen prior to the release of bradykinin. C:Superfamily; kininogen; cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eur. J. Biochem. 152, 307-314, 1985
A;Title: The amino acid sequence of the light chain of human high-molecular-mass kini A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          kininogen, HMW I precursor - bovine
N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen
N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokininogen
C;Species: Bos primigenius taurus (cattle)
C;Species: Hov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999
C;Accession: A01281; A91923; A91938; A2598
C;Accession: A01281; A91923; A91938; A2598
R;Kitamura, N; Takagaki, Y; Furuto, S; Tanaka, T; Nawa, H; Nakanishi,
Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;19-621/Product: HMW prokininogen I *status predicted <MAT> F;19-379/Product: HMW kininogen I heavy chain *status experimental F;19-130/Domain: cystatin homology <CY1> F;141-252/Domain: cystatin homology <CY2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Title: Studies on the str
A;Reference number: A91923;
A;Accession: A91923
                                F;382/Modified site: 4-hydroxyproline (Pro) #status predicted F;388-389/Cleavage site: Arg-Ser (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F;1-18/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C; Keywords: alternative splicing; blood coagulation; cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Disulfide bonds in bovine HMW kininogens A;Reference number: A94300 A;Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Sueyoshi, T; Miyata, T;
Seikagaku 56, 808, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Lottspeich, F.; Kellermann, J.; H
Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: protein
A; Residues: 'z', 20-123,'I', 125-127,'I', 129-378 <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Reference number: A92627; A; Accession: A29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A91938; A; Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Title: Studies on the primary structure of bovine high-molecular-weight kininogen. A; Reference number: A91938; MUID: 75170265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Han, Y.N.; Komiya, M
J. Biochem. 77, 55-68,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein A; Residues: 378-393 < KAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Kato, H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:V01491; GB:K01757; NID:g491; R;Kato, H.; Nagasawa, S.; Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-621 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Reference number: A93317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Title: A single gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Accession: A01281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kato, H.; Nagasawa, S.; Suzu
Biochem. 67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Χ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         for bovine high molecular weight 8317; MUID:84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          structure of bovine 923; MUID:70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    s:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Henschen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kininogen: cleavages of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PIDN:CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid sequence, positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and low molecular weight kini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           proteinase inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 H.; Miyata, T.; Iwana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   22-Jun-1999
experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PID: g492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          bonds a
                                                                                                                                                                                                                                                                      experi
de bond
```

В.,

0,

Gaps

0,

Holland, R.;

```
QΥ
                                                                                                                                                                                                       A; Gene: TP0353
C; Superfamily:
                                                                                                                                                                                                                                                                                                                                                             R;Fraser, C.M.; Norris, S.J.; Weinstock, G.M.; White, O.; Sutton, G.G.; Dodson, J.; Khalak, H.; Richardson, D.; Howell, J.K.; Chidambaram, M.; Utterback, they, L.; Weldman, J.; Smith, H.O.; Venter, J.C. Science 281, 375-388, 1998
A;Title: Complete genome sequence of Treponema pallidum, the syphilis spirochete A;Reference number: A71250; MUID:98332770
A;Accession: G71333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        probable ribonuclease H (rnhA) - syphilis spirochete
C;Species: Treponema pallidum subsp. pallidum (syphilis spirochete)
C;Date: 24-Jul-1998 #sequence_revision 24-Jul-1998 #text_change 22-Jun-1999
C;Accession: G71333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      probable integral membrane protein - Streptomyces coelicolor
(;Species: Streptomyces coelicolor
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 05-Nov-1999
C;Accession: T35064
R;Seeger, K,J: Harris, D.; Bentley, S.D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
submitted to the EMBL Data Library, July 1999
A;Reference number: 221567
A;Recession: T35064
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-275 <SEED
A;Cross-references: EMBL:AL096884; PIDN:CAB51427.1; GSPDB:GN00070; SCOEDB:SC4G6.04c
A;Experimental source: strain A3(2)
C;Genetics:
                           В
                                                                                                                                                                                                                                                A; Experimental C; Genetics:
                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA
A; Residues: 1-169 <COL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                        A; Cross references:
                                                                                                                                                                                                                                                                                                                                             A; Status: preliminary; nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: SCOEDB: SC4G6.04c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        F;399,400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) F;498-499/Cleavage site: Arg-Thr (kallikrein) **status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                  Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                           103 KHNGWKT 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           222 KNGKHNSW 229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              488 GKNNGKHYDWRT 499
                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KNGKHNGW 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GKKNGKHNGWKT 12
                                                              KHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
8; Conserv
                                                                                                                                                                                                                                                                 nces: GB:AE001215; GB:AE000520; NID:g3322631;
source: strain Nichols
                                                                                                                                                                                                           ribonuclease H
                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                    sequence of Treponema pallidum, the syphilis spirochete.
50; MUID:98332770
                                                                                                                       62.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       63.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.9%;
                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 51;
Pred. No.
                                                                                                                         Score 46;
Pred. No.
                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       47;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2;
4.1;
                                                                                                                       DB 2;
3.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DВ
                                                                                                                                                                                                                                                                                                                                             not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                      0,;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 621
                                                                                                                                            Length 169
                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                    PIDN:AAC65340.1; PID:g33226:
                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                      Gaps
                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                년 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gwir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  McDo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
                                   R:Hayashi, Y.; Ichinose, M.; Yuasa, H.; Tatematsu, FEBS Lett. 406, 147-150, 1997 R; Title: Cca3, the mRNA level of which transiently A;Reference number: 220971; MUID:97263491 A;Accession: T31081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species: Schizosaccharomyces pombe
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 16-Jul-1999
C;Accession: T11662
R;Barrell, B.G.; Rajandream, M.A.; Wood, V.
submitted to the EMBL Data Library, August 1997
A;Reference number: Z17305
A;Accession: T11662
                    A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                          C; Accession: T31081
                                                                                                                                                             C;Species: Rattus norvegicus (Norway rat)
C;Date: 22-Oct-1999 #sequence_revision 22
                                                                                                                                                                                                    cca3 protein
                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Map position: 1L
A; Note: SPAC6F12.11c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary; translated from GB/EMBL/DDBJA;Molecule type: DNAA;Residues: 1-374 <BAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Gene: NCSP:B17C10.30
A; Map position: 6
A; Introns: 31/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A:Status: preliminary
A:Molecule type: DNA
A:Molecule type: DNA
A:Residues: 1-516 <SCH>
A:Cross-references: EMBL:AL355926; GSPDB:GN00116; NCSP:B17C10.30
A:Experimental source: BAC clone B17C10; strain OR74A
C:Genetics:
A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: EMBL: Z98533;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Reference number: Z25022
A; Accession: T49422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RAD57 related protein [imported] - Neurospora crassa
N;Alternate names: protein B17C10.30
C;Species: Neurospora crassa
C;Date: 02-Jun-2000 #sequence_revision 02-Jun-2000 #text_change 02-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               submitted to the Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Accession: T49422
R;Schulte, U.; Aign, V.; Hoheisel, J.; Brandt, P.; Fartmann,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     probable transcription factor 44K chain - fission yeast (Schizosaccharomyces pombe)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                         214 KLNGKHKGTKT 224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity hes 8; Conserv
                                                                                                                                                                                                                                                                                                                                             N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                             KKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GKKNGKEEGMK 499
                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence Database,
                                                                                                                                                                                                                                                                                                                                                                                                   56.8%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NID:e1071719; PID:e334060
                                                                                                                                                                                                                                                                                                                                                                                                   Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                               22-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                 DB
32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DВ
30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 May 2000
                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                       3
                                                                                                                                                               #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                        Length 374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 516
                                                                                                                         Ishibashi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
```

before initiation

of DNA

0;

Gaps

A; Cross-references:

EMBL:AB000216; NID:g2104557; PIDN:BAA19969.1; PID:g2104558

```
R;Tettelin, H.; Saunders, N.J.; Heidelberg, J.; Jeffries, A.C.; Nelson, Hickey, E.K.; Haft, D.H.; Salzberg, S.L.; White, O.; Fleischmann, R.D.; ri, H.; Qin, H.; Vamathevan, J.; Gill, J.; Scarlato, V.; Masignani, V.; Science 287, 1809-1815, 2000
                                                                                                                                                                                                                                                                                                                                                                       ribonuclease HI NMB1618 [imported] - Neisseria meningitidis (strain MC58 serogroup C;Species: Neisseria meningitidis C;Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 19-Jan-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Superfamily: ribonu
C; Keywords: hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-145 <TET>
A; Cross references: GB: AE002512;
A; Experimental source: serogroup
                                                                                                                                                                                                                                          A;Authors: Grandi, G.; Sun, L.; Smith, H.O.; Fraser, C.M.; Moxon, E.R.; A;Title: Complete genome sequence of Neisseria meningitidis serogroup B A;Reference number: A81000; MUID:20175755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QУ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: rnhA; NMA1817
C;Superfamily: ribonu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: Complete DNA sequence of a serogroup A strain of Neisseria menigitidis Z2491. A;Reference number: A81775; MUID:20222556
A;Accession: F81807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Parkhill, J.; Achtman, M.; James, K.D.; Bentley, ; Holroyd, S.; Jagels, K.; Leather, S.; Moule, S.; Nature 404, 502-506, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ribonuclease H (EC 3.1.26.4) I NMA1817 [imported] - Neisseria meningitidis (strain C;Species: Neisseria meningitidis C;Date: 05-May-2000 #sequence_revision 05-May-2000 #text_change 02-Feb-2001 C;Accession: F81807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                       A; Reference number: A81000;
A; Accession: H81061
                                                                                                                                                                                                                                                                                                                                                                                                                                   H81061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: cca3
                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                             C; Accession:
 Query Match
Best Local S
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Lo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       :Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 KNG-----KHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KNGMENWIHGWKRNGWKT 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GSMNSRHNSWDT
 Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
9; Conserv
                                                                                                                                                                                                                                                                                                                                                              H81061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 50.06; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ribonuclease H
                                                                                      ribonuclease
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55.4%;
                   55.4%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56.8%;
Score 41; DB Pred. No. 20; 0; Mismatches
                                                                                                                                     GB:AE002098; NID:g7226866; PIDN:AAF41970.1; PID:g722686
B, strain MC58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 41; DB Pred. No. 20; 0; Mismatches
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GB:AL157959; NID:g7380371; PIDN:CAB85042.1; A, strain Z2491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
               DВ
20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S.D.; Churcher, C.; Klee, S.R.; More: Mungall, K.; Quail, M.A.; Rajandream,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ç.
                                 Length 145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1009
 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
 .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                               Dougherty, B.A.; Pizza, M.
                                                                                                                                                                                                                                                        Rappuoli, R.; strain MC58.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  بر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PID: 973804
 ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                            8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Z2491
               δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ďď.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                γ
```

```
A;Cross-references: EMBL:X95535; NID:g1524034; PIDN:CAA64780.1; PID:g1524035 R;Flashner, Y.; Shlomai, J.; Shafferman, A. Mol. Microbiol. 19, 985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-996, 1985-9
                                                                                                                                                                                A;Description: catalyzes a sequence-specific cleaving-joining C;Superfamily: Escherichia coli plasmid R6K nickase taxC C;Keywords: DNA binding; plasmid DNA replication
                                                                                                                                                                                                                                                                                                    C; Function
                                                                                                                                                                                                                                                                                                                                  A; Genome: plasmid R6K
                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: taxC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-227,'A',229-255,'K',257-385 <FLA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Residues: 1-385 <AVI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: Plasmid R6K contains two functional oriTs which can assemble simultaneously A; Reference number: S72275; MUID:96346167
A; Accession: S72275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R; Avila, P.; Nunez, B.; de la Cruz, F.
J. Mol. Biol. 261, 135-143, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Date: 14-Apr-1998 #sequence_revision 24-Apr-1998 #text_change 21-Jul-2000
C;Accession: S72275; S70937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N;Alternate names: DNA distortion C;Species: Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nickase taxC - Escherichia coli plasmid R6K
N; Alternate names: DNA distortion protein 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Gene: FlyBase:Dhyd/mst101
A;Cross-references: FlyBase:FBgn0011816
C;Superfamily: neurofilament triplet H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-344 <NEE>
A; Cross-references: EMBL: X73480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            submitted to the EMBL Data A; Reference number: $34153 A; Accession: $34153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Neesen, J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession: S34153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mst101-1 protein - fruit fly (Drosophila hydei)
C;Species: Drosophila hydei
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   :Genetics:
       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 304 GKKNGKKNDMK 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      75 KNGMENWIHGWKRNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KNG-----KHNGWKT
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Heinlein, U.A.O.; Buenemann,
       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                      55.4%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55.4%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Library,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NID:g313199; PID:g313200
   0
Score 41; DB Pred. No. 47; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nemann, H.
June 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    protein
                              DB
47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in concert to distort DNA within the
                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         #text_change 21-Jan-2000
                                                                         Length 385;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 344;
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                     reaction
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                             of single-stra
0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al
```

ω

KNGKHNGWKT

Ъ

```
hypothetical protein Y54E2A.9 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 20-Jun-2000 C;Accession: T27150 R;Lloyd, C.
                                                                                                                                                                                               В
                                                                                                                                                                                                                                  Qy
                                                                                                                                                                                                                                                                                                                                                                      C;Superfamily: cyclophilin homology F;6-162/Domain: cyclophilin homology <CYP>
                                                                                                                                                                                                                                                                                                                                                                                                               A; Map position: 4
A; Introns: 26/3; 45/1; 74/3; 83/1; 122/2; 165/1; 270/2; 307/1; 731/2; 754/2
A; Note: F8B4.120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein F8B4.120 - Arabidopsis thaliana (;Species: Arabidopsis thaliana (mouse-ear cress) C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 23-Apr-1999 #sequence_revision 23-Apr-1999 #text_change 23-Jul-1999 C;Accession: T05352 C;Accession: T05352 R;Bevan, M.; Terryn, N.; Ardiles, W.; Buysshaert, C.; Dasseville, R.; De Clerck, R.; ewes, H.W.; Mayer, K.F.X.; Schueller, C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
T27150
    submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-857 <BEV>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Reference number: Z15409
A; Accession: T05352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 submitted to the Protein Sequence Database, February 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
T05352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Status: preliminary.
A;Molecule type: DNA
A;Residues: 1-552 <PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Title: The genome sequence of the food-borne pathogen Campylobacter jejuni reveals hypela;Reference number: A81250; MUID:20150912
A;Accession: D81290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Experimental source: cultivar Columbia; BAC clone F8B4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:AL034567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Gene: kpsD; Cj1444c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: GB: AL139078; A; Experimental source: serotype
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C.W.; Quail, M.; Rajandre
Nature 403, 665-668, 2000
                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     329
                                                                                                                                                                                               171 GKKNGKH 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           312 KNGIQQGWKT 321
                                                                                                                                                                                                                                                                        Local Similarity
nes 7; Conserv
                                                                                                                                                                                                                   1 GKKNGKH 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 NGKHNGWKT 12
to the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NGEHNGLKT 337
                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
Data Library, October 1998
                                                                                                                                                                                                                                                                                           55.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                55.4%;
77.8%;
                                                                                                                                                                                                                                                                        ; Score 41; DB
%; Pred. No. 97;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; GB:AL111168; NID:g6968723; PIDN:CAB73868.1; PID:g69688; O2, strain NCTC 11168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                         DB
. 97;
                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                           Length 857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 552
                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     De
```

á

```
A;Map position: 1
A;Introns: 145/1
C;Superfamily: Caenorhabditis elegans hypothetical protein Y38H6C.19
                                                                                                                                                                                                                                                                                     A:Status: preliminary; translated from GB/EMBL/DDBJ
A:Molecule type: DNA
A:Molecule type: DNA
A:Residus: 1-198 <WIL>
A:Cross-references: EMBL:AL032646; PIDN:CAA21683.1; GSPDB:GN00019; CESP:Y54E2A.9
A:Experimental source: Clone Y54E2A
C:Genetics:
C:Genetics:
C:Genetics:
C:Genetics:
Search completed: July Job time: 646 sec
                                                                                    밁
                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number: Z20319
A; Accession: T27150
                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                      Matches
                                                                                   131 GOPNGKRNSW 140
                                                                                                                    1 GKKNGKHNGW 10
                                                                                                                                                      Conservative
               6
                                                                                                                                                                      54.1%;
                 2001, 09:18:00
                                                                                                                                                                      Score 40;
Pred. No.
                                                                                                                                                    Mismatches
                                                                                                                                                                    DВ
37;
                                                                                                                                                                                      2
                                                                                                                                                                                    Length 198;
                                                                                                                                                      Indels
                                                                                                                                                    0,
                                                                                                                                                    Gaps
```

0

```
Minimum DB
Maximum DB
                                                                                                                                                                                                                                                   Result
No.
                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                  Database
                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                   Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein - protein search, using sw model
  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
  seq length: 0
seq length: 2000000000
                                                                                                                                                                                                                                                %
Query
Match Length |
 July 6, 2001, 09:26:37; Search time 37.59 Seconds (without alignments)
10.936 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                 93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                               Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-437-912-4
74
                                                                                                                                                                                                                                                                                                                  SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
 Вd
PDI_ASPNG
HIS5_YEAST
C4BP_RAT
GRK5_BOYIN
GRK5_HUMAN
GRK5_RAT
MAS2_HUMAN
GLNA_BUTFI
                                                         POLL_HUMAN
NMT_CRYNE
YMDE_ECOLI
RNH_STRCO
GRK4_HUMAN
TOPL_BUCAL
MTDM_ARATH
YB33_SCHPO
RK23_ODOSI
RR5_PORPU
DCL_LYCES
VCP_VACCS
VCP_VACCY
YA09_SCHPO
ARHY_HUMAN
HEPL_PEDHE
YBX0_ARATH
TPR_PORGI
                                                                                                                                                                                  KNG_HUMAN
KNH2_BOVIN
KNH1_BOVIN
RNH_TREPA
YDVB_SCHPO
MST1_DROHY
RL2_AQUAE
ACOX_YEAST
                                                                                                                                                                                                                                                                        SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                   93435
        Q05819
Q9zq34
P25806
Q12730
Q12730
P33734
Q63514
P43249
P34947
Q62833
                                                                              Q086695
Q086695
P39533
P39533
P10266
P34809
P546614
Q99x7r6
Q9x7r6
Q92x7r6
P37371
P348871
P549539
P51298
P51298
P51298
P51298
P51298
P51298
                                                                                                                                                                                                                                                  Description
                                                               4 aquifex aeo
3 saccharomyc
6 homo sapien
9 cryptococcu
4 escherichia
6 streptomyce
8 homo sapien
1 buchnera ap
1 arabidopsis
8 schizosacch
9 odontella s
8 porphyra pu
3 lycopersico
8 vaccinia vi
8 schizosacch
2 homo sapien
9 pedobacter
4 arabidopsis
                            6 porphyromon
0 aspergillus
4 saccharomyc
4 rattus norv
9 bos taurus
homo sapien
rattus norv
homo sapien
butyrivibri
                                                                                                                                                                                                treponema p
schizosacch
drosophila
                                                                                                                                                                                                                     homo sapien
bos taurus
bos taurus
```

R R

Sueyoshi T., Miyata T., Kato H., Iwanaga S.; "Disulfide bonds in bovine HMW kininogens.";

	RI Fe										RX ME						OC Ma						443	41.	39 40	37 38	35 36	34
TOTAL DONOS.	Structural features of plasma kinins a ed. Proc. 27:52-57(1968).	UENCE OF LINE=902	"; 1. 152:307-314(198	; sequence of the light c	)-644. (); PubMed=4054110; Kellermann J., Henschen	stry 23:5691-5697(1984).	a human cDNA for alpha 2-	= OF 1-401 FROM N.A. =85122621; PubMed=6441591;	J. Biol. Chem. 260:8610-8617(1985).	ganization of the human	MEDLINE-85234583; PubMed-2989294; Kitamura N., Kitagawa H., Fukushima D.,	RICTUR	nan prekininogens.";   Chem	ng and sequence analysis of cDNAs and low molecular weight prekini	lver; 35234582; PubMed=298929 Y., Kitamura N., Nakan	EQUIENCE FROM N.A. (ISOFORMS HMW AND LMW	ryota; Metazoa; Chordata; Craniata; alia; Eutheria; Primates; Catarrhin _TaxID=9606;	s (Human)	(Rel. 01, Created) (Rel. 33, Last sequency (Rel. 40, Last annotat (Rel. 40, Last annotat) (Rel. 40, Last annotat)	1  MAN  O1042; P01043;  01042; P01043;	ALIGNMENTS	٠	36 48 36 48 36 48	36 48.6 514 1 36 48.6 514 1	36 48.6 186 1 36 48.6 450 1	36 48.6 185 1 PTH_RICF 36 48.6 186 1 PTH_HELF	36.5 49.3 356 1 36 48.6 153 1	37 50.0 729
າ	and kininogens.";			hain of human	A., Foertsch B.,	титиодеи.	lokawa H., Sasaki M.; Liniol proteinase inhibitor and		·	kininogen gene and a model for	Takagaki Y., Miyata T.,			s for human high molecular inogens. Primary structures of		(M).	: Vertebrata; Euteleostomi; ni; Hominidae; Homo.		e update) ion update) PROTEINASE INHIBITOR) (CONTAINS:	14 AA.	NI S		042410 gallus gall Q09537 caenorhabdi P04133 human adeno	Q59219 Q09825	P56077 P11107	Q9zcv4 ricketts Q9zjc3 helicoba	P09431 P44831	P15623 bacteroides

```
THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TENT OF THE TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                 CHAIN
                                                                                                              Alternative SIGNAL
                                                                                                                                                                             PRINTS; PR00334; KININOGEN.

PROSITE; PS00287; CYSTATIN; 2.

Glycoprotein; Plasma; Repeat; Thiol protease inhibitor; Vasodilator; Bradykinin; Blood coagulation; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  modified and this statement is not removed. entities requires a license agreement (See or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This
       PEPTIDE
                                                                                                                                                                                                                                                                                                                             Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SWISS-2DPAGE; P01043; HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seikagaku
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K02566 A
M11437 A
M11521 A
M11522 A
M11523 A
M11524 A
M11526 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11527 A
M11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: SECRETED.
SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW (SHOWN H PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HE A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA BRADYKININ ACTION); (5) LMW-KININOGEN INHIBITS THE AGGREGATION OF THROMEOCYTES; (6) LMW-KININOGEN IS IN CONTRAST TO HMW-KININOGEN NOT INVOLVED IN BLOOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTILDE BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH MUSCLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLOTTING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FUNCTION: (1) KININOGENS HMW-KININOGEN PLAYS AN IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SWISS-PROT entry is copyright. It is produced through
en the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                  IPR000010; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          56:808-808(1984)
19
19
381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2) INOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO
                                                                                                                                                splicing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KGHUL1.
B25276.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KGHUH1.
A25276.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB59551.
AAB59551.
AAB59551.
AAB59551.
AAB59551.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAB59550.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB59550.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAA35497
       644
380
389
                                                                                                                  18
                                                                                                                                                                                                                                                                                                                                     ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOINED.
JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                        KININOGEN HEAVY CHAIN
                                                                         KININOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SHOWN HERE) AND LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ЬY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (4F) IT HAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            commercia]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             way
```

```
RESULT 2
KNH2_BOVIN
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                Matches
                                                                                       Bos taurus (Bovine).
Eukaryota; Metazoa; C
Mammalia; Eutheria; C
Bovidae; Bovinae; Bos
                                                                                                                                  KNH2_BOVIN
P01045;
21-JUL-1986
21-JUL-1986
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                           DISULFID CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
DOMAIN
Sueyoshi T.,
      SEQUENCE OF 19-376
MEDLINE=87137530; 1
                           "A single gene for bovine weight kininogens."; Nature 305:545-549(1983).
                                                          SEQUENCE FROM N.A. MEDLINE=84014106; PubMed=6571699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REPEAT
REPEAT
                                                  Kitamura N.,
                                                                                NCBI_TaxID=9913;
                                                                                                                     BRADYKININ].
                                                                                                                             KININOGEN,
                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                           CONFLICT
                                                                                                                                                                                                                                                                                 VARSPLIC
                                                                                                                                                                                                                                                                                                VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                    510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REPEAT
                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                 1 GKKNGKHNGWKT
                                                                                                                                                                                                   GKKNGKHNGWKT 521
                                                                                                                                                                                                                              h 100.0%;
Similarity 100.0%;
12; Conservative (
                                           N., Takagaki Y.,
gene for bovine
                                                                                                                            86 (Rel.
86 (Rel.
00 (Rel.
, HMW II
                                                                                                                                                                                                                                                                    644
                                                                                                                                                                                                                                                                                                                                                                                           28
83
107
142
206
229
328
351
351
Miyata T.,
                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                STANDARD;
                                                                                        Bos.
      PubMed=3546295;
                                                                                                                         01, Created)
01, Last sequence update)
40, Last annotation updat
PRECURSOR (THIOL PROTEINA
                                                                                                                                                                                                                 12
                                                                                                                                                                                                                                                                                               Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                      Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                    71945
Hashimoto N.,
                                            Furuto S., Tanaka T., high molecular weight
                                                                                                                                                                                                                                                                    MW;
                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                  VSPPHTSMAPAQDEERDSGKEQGHTR ->
PPKAGAEPASEREVS (IN ISOFORM LAW).
MISSING (IN ISOFORM LAW).
T -> I (IN REF. 1).
7 -> I (IN REF. CRC64;
                                                                                                                                                                                                                                                                                                                                                                            N-LINKED
N-LINKED
                                                                                                                                                                                                                              Score 74; DB Pred. No. 0.0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KININOGEN LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTIVITY).
                                                                                                                            ion update)
PROTEINASE
                                                                                                                                                                619
                                                                                                                                                                                                                                                                                                                                                                      (GLCNAC.
(GLCNAC.
(GLCNAC.
Kato H.,
                                                                                                                                                                                                                              . 0.0001;
                                                                                                                                                                AA
                                                                                                                            INHIBITOR) [CONTAINS:
Hayashida H.,
                                            Nawa
and
                                                                                                                                                                                                                                             Length 644;
                                                                                                                                                                                                                                Indels
                                         low
                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL). (POTENTIAL). (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACID
                                             molecular
                                                  Nakanishi
                                                                                                                                                                                                                                                                                                SHLRSCEYKGR
                                                                                                                                                                                                                               0
                                                                                                                                                                                                                               Gaps
                                                   s.;
```

0

Miyata T.,

```
HWA-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HEAVINGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMBIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIOPROFECTIVE EFFECT (DIRECTLY VIA BRADYKININ
ACCION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Studies on the primary structure of bovine high-molecular-we kiningen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
                                                                                                                                                                                                                                                            use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIINE-76260155; PubMed-956151;
Han Y.N., Kato H., Iwanaga S., Suzuki T.;
"Primary structure of bovine plasma high-molecular-weight kininogen.
The amino acid sequence of a glycopeptide portion (fragment 1)
following the C-terminus ot the bradykinin moiety.";
Biochem. 79:1201-1222(1976).
                                                 InterPro; IPRO00010; -.
InterPro; IPRO02395; -.
Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Studies on the structure of bovine kininogen: cleavages of disulfide bonds and of methionyl bonds in kininogen-II.";
J. Biochem. 67:313-323(1970).
             Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation; Signal;
                                                                                                                                                                                                     EMBL; V01492; CAA24736.1; -.
EMBL; V01492; CAA24737.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 456-496 MEDLINE=75170265; P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 376-391
MEDLINE=70180420; Po
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              chain
                                                                                                                                                                                                                                                                                                                                                            between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Biochem.
[5]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 387-455.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovine high molecular weight kininogen. The amino acid sequence, ositions of carbohydrate chains and disulfide bridges in the hea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biol.
                                                                                                                                                                                                                                                                                                                                    s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EN European Bioinformatics Institute. There are no resti
                                                                                                                                                                                                                                                                                                                                                                                                            TO RESIDUE 398.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININGGEN BY
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW II AND LAW II KININOGEN PRECURSORS
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                 A01282; КGBOH2.
B29559; B29559.
                                                                                                                                                 P04129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            portion."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nagasawa S.,
                                                                                                                                                   lAFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        262:2768-2779(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=4986212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Suzuki
                                                                                                                                                                                                                                                                                                                                  There are no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                high-molecular-weight
                                                                                                                                                                                                                                                                                                                                                                                                                                      BY PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the heavy
                                                                                                                                                                                                                                                                                                                                                                              þ
                                                                                                                                                                                                                                                                                                                                                            collaboration -
                                                                                                                                                                                                                                                                                                                                        on
```

```
밁
                                                                                                                                                                                                                                                                          ρ
                                                                                                                                                                                                                                                                                                                              KNH1_BOVIN
                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                  DISULFID
DISULFID
DISULFID
DISULFID
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                             DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
MOD_RES
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                 KNH1_BOVIN
P01044;
                                                                                                                                                                                           21-JUL-1986 (Rel.
21-JUL-1986 (Rel.
01-JUN-1994 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
CHAIN
                                                                                Nature
[2]
                                                                                                          SEQUENCE FROM N.A.
MEDLINE-84014106; PubMed-6571699;
Kitamura N., Takagaki Y., Furuto
                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
SEQUENCE OF 378-393.
MEDLINE=70180420; PubMed=4986212;
                             chain
                                   positions
                                                  Sueyoshi T., Miyata
Miyata T., Iwanaga S
                                                               SEQUENCE OF 19-378.
MEDLINE=87137530; F
                                                                                             weight
                                                                                                                                     NCBI_TaxID=9913,
                                                                                                                                               Bovidae; Bovinae; Bos.
                                                                                                                                                       Mammalia; Eutheria;
                                                                                                                                                             Bos taurus (Bovine)
Eukaryota; Metazoa;
                                                                                                                                                                             BRADYKININ]
                                                                                                                                                                                                                                                                                                                                                                                      DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
                     J. Biol.
                                                                                                   Kitamura N., Takagaki Y., Furuto S., Tanaka T.,
"A single gene for bovine high molecular weight
                                                                                                                                                                                      KININOGEN,
                                                                                                                                                                                                                                                                                                                                            VARIANT
                                   Bovine high molecular weight kininogen. The amino ositions of carbohydrate chains and disulfide bric
                                                                                                                                                                                                                                                                                                                                     /ARIANT
                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                                                      GKKNGKHNGWKT
                                                                                                                                                                                                                                                              GKNNGKHYDWRT 497
                             portion."
                                                                                     kininogens.";
305:545-549(1983).
                                                                                                                                                                                                                                                                                          Similarity
8; Conser
                     Chem.
                                                                                                                                                                                    MMH
                                                  Iwanaga S.;
                                                                                                                                                                                                                                                                                                                              619
                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                 262:2768-2779(1987)
                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                   . 01, Last sequence up. 29, Last annotation PRECURSOR (THIOL PRO)
                                                                                                                                                                                           01, Created)
01, Last sequence 29, Last annotations
                                                                                                                                                                                                                                                                           12
                                                                 PubMed=3546295;
                                                                                                                                                                                                                                                                                                                                                   Ŧ.,
                                                                                                                                                       Cetartiodactyla; Ruminantia;
                                                                                                                                                             Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                              68710
                                                                                                                                                                                                                                                                                                68.9%;
66.7%;
                                                         Hashimoto
                                                                                                                                                                                                                                                                                                                              MW;
                                                                                                                                                                                                                                                                                                                                                                                                                               N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                Score
Pred.
                                                                                                                                                                                                                                                                                                                                     ΞĽ
                                                                                                                                                                                                                                                                                                                                                  н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                         OR 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                                                                     INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HEAVY CHAIN
                                                                                                                                                                                                                                                                                                                            -> P.
-> V.
-> K.
F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                                          ed. No. 0.5
Mismatches
                                                                                                                                                                                   nce update)
ation update)
L PROTEINASE :
                                                         Z
,
                                                                                                                                                                                                                                                                                                51;
No.
                                                                                                                                                                                                                         621
                                                         Kato H., Hayashida H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC
                                                                                                                                                                                                                                                                                               DB 1;
0.51;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  II.
                                                                                                                                                                                    INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                                                                                          Ψ
                                   mino acid
bridges i
                                                                                                                                                                                                                                                                                                       Length 619;
                                                                                                     Nawa H.,
and low m
                                                                                                                                                       Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACID.
                                   sequence,
in the heavy
                                                                                                     , Nakanishi molecular
                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                          0
```

```
DISULFID
DISULFID
DISULFID
                                                                             CARBOHYD
CARBOHYD
                                                                                                                                                                                                                       DOMAIN
DOMAIN
                                                                                                                                       CARBOHYD
                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Studies on the primary structure of bovine high-molecular-weight kiningen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";

J. Biochem. 77:55-68(1975).
                                                                                                                       CARBOHYD
                                                                                                                                                                               MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                               PEPTIDE
                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                            SIGNAL
                                                                                                                                                                                                                                                                                                                                                                             Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR; A01281; KGBOH1.
PIR; A29559; A29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; V01491; CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR000010; ...
InterPro; IPR002395; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=75170265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 458-498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [4]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Studies on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                European Bioinformatics Institute. The by non-profit institutions as long ified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW I AND LAW I KININOGEN PRECURSORS ARE PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROWBIN- AND PLASMIN-INDUCED AGGREGATION OF THROMBOYTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4P2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: (1) KININOGENS ARE INHIBITORS OF THE HAW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLC HELPING TO POSITION OPTIMALLY PREKALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TO RESIDUE 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nagasawa S., Suzuki
on the structure of
d of methionyl bonds
19
380
389
19
136
258
258
19
141
106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 67:313-323(1970)
                                                                                                                                                                                                                                                                                                                                                               response;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S., Suzuki T.;
tructure of bovine kininogen: cleavages of disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PubMed=1169237;
621
378
388
621
135
257
257
378
19
19
136
168
197
204
591
125
591
                                                                                                                                                                                                                                                                                                                                                          Signal.
                                                                                                                                                                         LIGHT CHAIN.
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC ACID.
                                                      N-LINKED (GLCNAC. . N-LINKED (GLCNAC. . INTERCHAIN.
                                                                                                                     OR 169
                                                                                                                                     PARTIAL.
                                                                                                                                                          N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                               BRADYKININ
                                                                                                                                                                                                                                                                                                      HEAVY
                                                                                                                                                                                                                                                                                                                                              PROBABLE
                                                                                                                                                                                                                                                                                                    CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DF THIOL PROTEASES; (2) BLOOD COAGULATION BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               and
                                                                                           .) (PARTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       no
```

```
RESULT 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-MAY-2000
30-MAY-2000
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RNH_TREPA O83372;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID SEQUENCE
  SEQUENCE
                                                                                                                                or send an
                                                                                                                                                       use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                     Fraser C.M., Norris S.J., Weinstock G.M., White O., Sutton G.G., Dodson R., Gwinn M., Hickey E.K., Clayton R., Ketchum K.A., Sodergren E., Hardham J.M., McLeod M.P., Salzberg S., Peterson J., Khalak H., Richardson D., Howell J.K., Chidambaram M., Utterback T., Khalak H., Artiach P., Bowman C., Cotton M.D., Fujii C., Garland S., Hatch B., Horst K., Roberts K., Sandusky M., Weidman J., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Treponema pallidum.
Bacteria; Spirochaetales;
NCBI_TaxID=160;
                                                                                                                               entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a
                                                            Hydrolase;
                                                                                               rigr; rp0353;
                                                                                                        EMBL; AE001215; AAC65340.1;
                                                                                                                                                                              the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                       -!- CATALYTIC ACTIVITY:
                                                                                                                                                                                                                                                                                                                            Science 281:375-388(1998)
                                                                                                                                                                                                                                                                                                                                      spirochete."
                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=98332770; PubMed=9665876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RNHA OR TP0353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RIBONUCLEASE
                                                                                                                                                                                                                                                                                                                -!- FUNCTION:
                                                                                                                                                                                                                                                                                                                                                  "Complete genome sequence of Treponema
                                                                                                                                                                                                                                                                                                                                                               Venter J.C.;
                                                                                  nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             488
                                                                                                                                                                                                                                        COFACTOR: REQUIRES MAGNESIUM FOR ACTIVITY (BY SIMILARITY).
SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                              SIMILARITY: BELONGS TO THE RNASE H FAMILY.
                                                                                                                                                                                                                                                                             MONOESTER.
                                                                                                                                                                                                                                                                                       FUNCTION: THIS ENZYME IS AN ENDONUCLEASE THAT RNA-DNA HYBRIDS SPECIFICALLY (BY SIMILARITY). CATALYTIC ACTIVITY: ENDONUCLEOLYTIC CLEAVAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GKNNGKHYDWRT
                                                                       PF00075;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
8; Conser
                                                                                                                                                                                         the Swiss Institute of Bioinformatics
                                                                                  IPR002156;
                                                           Nuclease;
63
87
151
169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   205
228
263
327
350
621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel. 39, Created)
(Rel. 39, Last sequence update)
(Rel. 39, Last annotation update)
E H (EC 3.1.26.4) (RNASE H)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                      rnaseH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ΑĀ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               217
247
266
339
369
                          12
63
87
   18184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68.9%;
66.7%;
                                                           Endonuclease;
   ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Spirochaetaceae; Treponema
           MAGNESIUM
MAGNESIUM
MAGNESIUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
 MAGNESIUM (BY SIMIL MAGNESIUM (BY SIMIL MAGNESIUM (BY SIMIL MAGNESIUM (BY SIMIL 164311053632B047)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    D16850BEFE3C55CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     51;
No.
                                                           Magnesium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   169
                                                                                                                                           (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                               There are no restrictions ong as its content is in
                                                                                                                                                                                                                                                                                                                                                   pallidum,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ā
         SIMILARITY).
SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                     Usage
                                                                                                                                                                                                                                                                                                               THAT DEGRADES THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 621
                                                                                                                                                                                         and the
                                                                                                                                                                                                                                                                                                                                                   the
                                                                                                                                                                                                                                                                                       TO 5'-PHOSPHO
                                                                                                                                                       γģ
                                                                                                                                                                                                                                                                                                                                                  syphilis
                                                                                                                                                        and
                                                                                                                                                                                         EMBL outstation
                                                                                                                                                     for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                    collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                    s.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

Query Match

Score

46;

DB

۲.

Length 169;

```
ID ID DIT DIT DIT ON THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A LD DATE OF THE COLUMN TO THE COLUMN TO COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COLUMN THE COL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
YDVB_SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last seque)
15-JUL-1998 (Rel. 36, Last annot.
HYPOTHETICAL 43.4 KDA PROTEIN C61
SPAC6F12.11C.
Schipperson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FEB-1995
01-FEB-1995
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _DROHY
                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Arthropoua, ....
Pterygota; Neoptera; Endopterygota;
Ephydroidea; Drosophilidae; Drosoph
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MST1_DF
Q08695;
"The Drosophila hydei gene Dhmst101(1) repetitive, axoneme-associated protein Y chromosomal deletion mutant flies.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Badcock K., Churcher C.M., Barrell B.G., Rajandream M.A., Submitted (AUG-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 014229;
15-JUL-1998
                                                                                                                                                                                                                                                                       Ephydroidea; Dro
NCBI_TaxID=7224;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AXONEME-ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycete
Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                Drosophila hydei (Fruit
                                                                                                                                                                                                                                                                                                                                                                                                                                         MST101(1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical protein DOMAIN 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schizosaccharomyces.
                                                                                                     Neesen J., Buenemann H.,
                                                                                                                                  MEDLINE=94200512; PubMed=8150205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; Z98533; CAB11095.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YDVB_
                                                                                                                                                                                                           SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         103 KHNGWKT 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 KKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DROHY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KLNGKHKGTKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCHPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 374 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Rel. 31, Created)
(Rel. 31, Last seq
(Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                        Ν.Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31, Last sequence update)
40, Last annotation update)
PROTEIN MST101(1).
                                                                                                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                          Arthropoda; Tracheata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43426 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               56.
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
PROTEIN C6F12.11C IN CH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 7%;
                                                                                                                                                                                                        CHARACTERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                fly).
                                                                                                     Heinlein U.A.;
                                                                                                                                                                                                                                                                                                       Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 42; DB Pred. No. 9; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POLY-PRO. 615C054F6AE0D471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. 0.95; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Schizosaccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                          Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   374
                                   with differential abundance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IN CHROMOSOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ą
                                                                                                                                                                                                                                                                                                                                                                          Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                          Brachycera; Muscomorpha,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 374;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wood
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>۷</u>
::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
```

```
RESULT
RL2_AQUAE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                               RL2_AQUAE
066434;
15-DEC-1998
15-DEC-1998
30-MAY-2000
                                                      modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                   Deckert G., Warren P.V., Gaasterland T., Young W.G., Ler Graham D.E., Overbeek R., Snead M.A., Keller M., Aujay Ne Feldman R.A., Short J.M., Olson G.J., Swanson R.V.; "The complete genome of the hyperthermophilic bacterium
                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Dev. Biol. 162:414-425(1994)

-i- FUNCTION: POSSIBLE STRUCTURAL ROLE IN THE
-ASSOCIATED WITH AXONEMAL STRUCTURES.
-i- SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMI-
-i- TISSUE SPECIFICITY: TESTIS. LOCATED IN SPE
                           EMBL; AE000669; AAC06392.1;
                                                                                                                                                                         Nature 392:353-358(1998).
-I- FUNCTION: THIS PROTEIN IS A PRIMARY 23S RRNA-BINDING PROTEIN HAS PEPTIDYLTRANSFERASE ACTIVITY (BY SIMILARITY).
-I- SIMILARITY: BELONGS TO THE L2P FAMILY OF RIBOSOMAL PROTEINS
                                                                                                                                                                                                                                         aeolicus.
                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Aquificales;
NCBI_TaxID=63363;
                                                                                                                                                                                                                                                                                                                                                                                                                                    50S RIBOSOMAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                MEDLINE=98196666; PubMed=9537320;
                                                                                                                                                                                                                                                                                                                                                                                                       Aquifex aeolicus.
                                                                                                                                                                                                                                                                                                                                                                                                                        RPLB OR AQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sperm;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X73480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FlyBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304 GKKNGKKNDMK 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPERMATID BUNDLES.

DOMAIN: THE PREDOMINANT STRUCTURE IS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POLYMORPHISM: THE NUMBER OF REPEATS VARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $34153; $34153.
; P01032; 1C5A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Repeat; Wiltigene family.

Repeat; Multigene family.

19 x 16 AA APPROXIMATE TANDEM REPEATS

F-K-K-C-X-E-X-A-[KQ]-K-X-X-E-X-A-X.

744 AA: 37793 MW; 24C65D2510387E2A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FBgn0011816; Dhyd\mst101(1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        requires a
                                                                                                                                                                                                                                                                                                                                                                                                                                   (Rel. 37,
(Rel. 39,
(AL PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAA51875.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 . 37, Created)
. 37, Last sequences. 39, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
L2.
                                                                                                                                                                                                                                                                                                                                                                                       Aquificaceae; Aquifex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             304
                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALPHA-HELICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPERMATOCYTES
                                                                                      Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPERM TAIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 344;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BETWEEN STRAINS
                                                                                                                                                                                                                                                                                  Aujay M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                      bу
                                                                                                                                                                                                                                                                                                  Lenox
                                                                                                                                                                                                                                                      Aquifex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H
                                                                                                                                                                                                                                                                                                  A.L.,
                                                                                        for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                      n no way
                                                                                                                                                                                                                                                                                    ₽.
                                                                                                                                                                                                           IT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
```

InterPro;

PF00181;

```
RESULT 8
ACOX_YEAST
ID ACOX_Y
AC P3953
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-FEE
DT 01-F
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뫄
                                         Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; X77688; CAA54757.1;
EMBL; Z49475; CAA89495.1;
PIR; S46631; S46631
HSSP; P16276; 6ACN.
SGD; S0003736; YJL200C.
                                                                                                                                                        METAL
SEQUENCE
                                                                                                                                                                                                                                                                                                                 PRINTS; P
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Purnelle B., Coster F., Goffeau A.;
Purnelle B., Coster F., Goffeau A.;
"The sequence of a 36 kb segment on the left arm of yeast chromosome X identifies 24 open reading frames including NUC1, PRP21 (SPP91), CDC6, CRY2, the gene for S24, a homologue to the aconitase gene ACO1 and two homologues to chromosome III genes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACOX_YEAST STANDARD: PRT; 789 AA. p39533; 01-FEB-1995 (Rel. 31, Created) 01-FEB-1995 (Rel. 31, Last sequence update) 01-NOV-1997 (Rel. 35, Last annotation update) pUTATIVE ACONITASE IN PRP21-UBP12 INTERGENIC YJL200C OR J0327.
                                                                                                                                                                                                                                                  Hypothetical 4Fe-4S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and two homologues to chromosome III genes.";
Yeast 10:1235-1249(1994).
-i- CATALYTIC ACTIVITY: CITRATE = CIS-ACONITATE + H(2)O.
-i- SIMILARITY: BELONGS TO THE ACONITASE/IPM ISOMERASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000573; -.
InterPro; IPR001030; -.
Pfam; PF000694; Aconitase_C;
                                                                                                                                                                                                                                                                                              PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ribosomal
                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00330; aconitase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=95274326; PubMed=7754713;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-S288C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomycetales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264
Ν
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ļ
  KKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GRTRGKHPESPWGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GKKNGKHN----GWKT
                                                                                                                                                                                                                PRO0415; ACONITASE.

E; PS00450; ACONITASE_1; 1.

Conicase; Tricarboxylic acid cycle;

(AFE-45) (BY
                                         Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PS00467; RIBOSOMAL_L2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     protein
                                                                                                                                                      385
448
451
789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fungi; Ascomycota; Saccharou
cetales; Saccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     304
                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAA54757.1;
CAA89495.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                             385
448
451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       rRNA-binding
                                                                                                                                                          86583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     34593 MW;
                                                                   52
63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             50
50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12
                                                                . 6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2.7%;
                                                                                                                                                          ₩,
                                           0,
                                                                Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                        IRON-SULFUR (4FE-4S)
IRON-SULFUR (4FE-4S)
IRON-SULFUR (4FE-4S)
FABB4FE482D3F993 CR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saccharomycotina; Saccletaceae; Saccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1052B90014979058 CRC64;
                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                39;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           νο.
                                                            DB
55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
22;
                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGION
                                                                                                                                                      1S) (BY
1S) (BY
1S) (BY
1CRC64;
                                                                                     Length 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (EC 4.2.1.3).
                                                                                                                                                                             ( SIMILARITY).
( SIMILARITY).
( SIMILARITY).
                                                                                                                                                                                                                                                                       Iron-sulfur
                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                           Gaps
                                           0,
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALD DARKET REAL CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF THE CONTRACTOR OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                        NMT_CRYNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                 01-FEB-1994
01-FEB-1994
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-1989 (Rel. 10, Created)
01-MAR-1989 (Rel. 10, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
RETROVIRGS-RELATED POL POLYPROTEIN [CONTAINS:
(EC 2.7.7.49); ENDONUCLEASE].
                                                                                                                                                                                                                                                                                  01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
01-OCT-2000 (Rel. 28, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
GLYCYLDEPTIDE N-TETRADECANOYLTRANSFERASE (EC 2.3.1.97) (PEPTIDE N-MYRISTOYLTRANSFERASE) (MYRISTOYL-COA:PROTEIN N-MYRISTOYLTRANSF
                                                                                                                                                                                                                                                                                                                                                                                                       NMT_CRYNE
P34809;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002156; ...

Pfam; PF00202; Integrase_2n; 1.

Pfam; PF00552; integrase; 1.

Pfam; PF00075; rnaseH; 1.

Pfam; PF00078; rve; 1.

Pfam; PF00078; rvt; 1.

Pfam; PF00078; rvt; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             POL1_HUMAN
P10266;
MEDLINE=94132075; PubMed=8300631;
Lodge J.K., Johnson R.L., Weinberg R.A., Gordon J.I.;
"Comparison of myristoyl-COA:protein N-myristoyltransferases
three pathogenic fungi: Cryptococcus neoformans, Histoplasma
                                                                                                                                                                                        Tremellaceae;
                                                                                                                                                                                           Eukaryota; Fungi; Basidiomycota; Tremellaceae; Filobasidiella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Virol. 60:505 J. PIR; D24483; GNHUER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=87036922; PubMed=3021993;
Ono M., Yasunaga T., Miyata T., Ushikubo
"Nucleotide sequence of human endogenous
the mouse mammary tumor virus genome.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HUMAN
                                                                                              SEQUENCE FROM N.A. STRAIN=L210425;
                                                                                                                                               NCBI_TaxID=5207;
[1]
                                                                                                                                                                                                                                         Cryptococcus neoformans (Filobasidiella neoformans)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR000477; -.
InterPro; IPR001037; -.
InterPro; IPR001584; -.
InterPro; IPR002156; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
Eukaryota; Me
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Endonuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                 (NMT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GKKNGKHNG----WK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GKKNSPHEGKLIWWK 816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KLTGKLNGWST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P03366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         585
874 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60:589-598(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Polyprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         764
98936 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             52.7%;
53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REVERSE TRANSCRIPTASE.
ENDONUCLEASE.
; FD985989798018B6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                 Hymenomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             39;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                  491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               retrovirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Η.;
                                                                                                                                                                                                                                                                                                                                                                                                                                  β
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ļ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REVERSE
                                                                                                                                                                                                                                                                                       N-MYRISTOYLTRANSFERASE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 874;
                                                                                                                                                                                                                   Tremellales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nuclease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSCRIPTASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4.
                          trom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ļ.
```

```
RESULT
YMDF_EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT OF THE
DЬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             YMDF_ECOLI
P56614;
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _ECOLI
             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                      Unpublished observations (AUG-1998).
                                                                                                                                                                                                                                                                                                                                                             Science
                                                                                                                                                                                                                                                                                                                                                                                                                           Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             capsulatum, and Candida albicans.";
J. Biol. Chem. 269:2996-3009(1994).
                                                                                                                                                                                                                                                                                                                                                                                                        Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Transferase; Acyltransferase.
MUTAGEN 487 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00975; NMT_1; 1. PROSITE; PS00976; NMT_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          modified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ÷
                                                                                                                                                                                                                                                                                                                                                       "The complete genome sequence of Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-DEC-1998
15-DEC-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF01233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; L25116; AAA17547.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <del>'</del>
                                                                                                                                                                                                                                                                                                          IDENTIFICATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 38 GTKNLGEHKFWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GKKN-GKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBI outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way ified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: CYTOPLASMIC. SIMILARITY: BELONGS TO THE NMT FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: ADDS MYRISTOYL GROUP TO N-TERMINAL GLYCINE RESIDUE CERTAIN CELLULAR PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-TETRADECANOYLGLYCYL-PEPTIDE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATALYTIC ACTIVITY: TETRADECANOYL-COA + GLYCYL-PEPTIDE =
                                                                                                                                                                                                                                                                            X. E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 61.88; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000903;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rel.
5.9 h
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NMT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 37, Created)
. 37, Last sequence update)
. 37, Last annotation update)
KDA PROTEIN IN WRBA-PUTA INTERGENIC REGION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54818 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        52.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 38.5; [Pred. No. 43; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      G->D: REDUCED ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BF84A3BC61349B9F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                  Escherichia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                                                                                                                                                                                                                                                                coli K-12.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ٠,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 491;
                                                                                                                                                                                                                                                                                                                                                                                                                                Rose D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۳.
```

```
RESULT 12
RNH_STRCO
밁
                     Š
                                                                                                             SO TITIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SORR
                                                 Matches
                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EcoGene; EG14358; ym
Hypothetical protein
SEQUENCE 57 Aa. F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-MAY-2000 (Rel. 39
30-MAY-2000 (Rel. 39
30-MAY-2000 (Rel. 39
RIBONUCLEASE H (EC 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RNH_STRCO
Q9X7R6;
                                                                                                                                                                                                                                                                                                                                                                                                          Oliver K., Harris D., James K.D., Parkhill J., Barrell B.G., Rajandream M.A.;
Submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: THIS ENZYME IS AN ENDONUCLEASE THAT DEGRADES THE RNA-DNA HYBRIDS SPECIFICALLY (BY SIMILARITY).
-!- CATALYTIC ACTIVITY: ENDONUCLEOLYTIC CLEAVAGE TO 5'-PHOSPHO-
                                                                                                                          METAL
METAL
                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                          Pfam; PF00075; rnaseH; Hydrolase; Nuclease; EI
                                                                                                                                                                                                                                       use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Firmicutes; Actinobacter
Actinomycetales; Streptomycineae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Streptomyces coelicolor.
                                                                                                             SEQUENCE
                                                                                                                                                                                                                EMBL; AL049863; CAB42933.1;
                                                                                                                                                                                                                                                                                                                                                -
                                                                                                                                                                                                                                                                                                                                                                                    -!- COFACTOR: REQUIRES MAGNESIUM FOR ACTIVITY (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RNHA OR SC5H1.08C
                                                                                                                                                                                                      interPro;
88
                                                             Local.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22 GKKGGQHSG
                       6 KHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GKKNGKHNG
                                                                                                                                                                                                                                                                                                                                                         SUBUNIT: MONOMER (BY SIMILARITY).
SUBCELLULAR LOCATION: CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE RNASE H FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                 MONOESTER.
KRNGWKT
                                               Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                    IPR002156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       al protein
57 AA; 5
                                                                                                             231 AA;
                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
94
                      12
                                                                                                                                          10
50
72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ymdF.

    Created)
    Last sequence update)
    Last annotation update)
    Aust annotation update)

                                                                                                          E: Endonuclease; Magnesium.

10 MAGNESIUM (BY SIMILA
50 MAGNESIUM (BY SIMILA
72 MAGNESIUM (BY SIMILA
138 MAGNESIUM (BY SIMILA
138 C650C6945CC1899A C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NOT_ANNOTATED_CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5883 MW;
                                                                                                              24297
                                                                                                                                        10
50
72
                                                           51.4%;
85.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51
66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Actinobacteria;
                                                 0;
                                                                                                                                                                                                                ALT_INIT.
                                                 Pred. No. 25;
); Mismatches
                                                                       Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 38;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D18133DAE91C6F5B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                           NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Streptomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Actinobacteridae;
                                                         DB
25;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                         Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
Y SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.
                                                                       Length 231;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 57
                                                                                                             CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptomyces.
                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                      엵
                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

RESULT 13 GRK4\_HUMAN

```
germinal
J. Biol.
                                                entities
or send a
                                                                                                              between
the Euro
                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRK4_HUMAN STANDARD; PRT; 578 AA.

P32298; 013293; 013294; 013295; 015313; 015314; 015315; 015

000641; 000642; 014453; 014725;

01-OCT-1993 (Rel. 27, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
G PROTEIN-COUPLED RECEPTOR KINASE GRK4 (EC 2.7.1.-) (ITII).
GPRK2L OR GPRK4 OR GRK4.
                                                                                                                                                This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=94183267; pubMed=8135832; Sallese M., Lombardi M.S., de Blasi A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Testis;
Premont R.T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ambrose C., James M., Barnes G., Lin C., Bates G., Alth Duyao M., Groot N., Church D., Wasmuth J.J., Lehrach H. Buckler A.J., Gusella J.F., McDonald M.E.;
"A novel G protein-coupled receptor kinase gene cloned hum. Mol. Genet. 1:697-703(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                              -
                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sallese M., Mariggio S., Baccetti B., de Blasi A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE-93258311;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=94183267;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Premont R.T., Lefkowitz R.J.;
"Characterization of the G protein-coupled receptor kinase Identification of four splice variants.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE=Testis;
MEDLINE=97248580;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Two isoforms of G protein-coupled
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQUENCE OF 3-83 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        protein-coupled receptor kinase GRK4. Molecular analysis of the ir isoforms and ultrastructural localization in spermatozoa and
                                                                                                                                                                                                         ALTERNATIVE PRODUCTS: 4 ISOFORMS; GRK4-ALPHA/GRK4D (SHOWN HERE), GRK4-BETA/GRK4C, GR4K-GAMMA/GRK4A AND GR4K-DELTA/GR4KB; ARE PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICTY: FESTIS, AND IN A LOWER EXTENT IN OTHER TISSUES INCLUDING BRAIN CORTEX AND STRIATUM.
SIMILARITY: BELONGS TO THE SER/THR FAMILY OF PROTEIN KINASES.
                                                                                                              European
                                                                                                                                                                          GPRK SUBFAMILY.
SIMILARITY: CONTAINS 1 RGS DOMAIN.
                                                                                                                                                                                                                                                                                                         CALMODULIN.
                                                                                           SWISS-PROT entry is copyright. It is produced through a collaboratic een the Swiss Institute of Bioinformatics and the EMBL outstation European Bioinformatics Institute. There are no restrictions on it by non-profit institutions as long as its content is in no was
 L03718;
X97879;
                                                 an
                                                                            non-profit institutions as long and this statement is not removed.
                                              requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biophys.
                                                                                                                                                                                                                                                                                                                                                                                                                       윾
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cloning."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SEP-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                       325-578 FROM N.A.
   CAA66468
                  AAB04045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           272:10188-10195(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PubMed=9092566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . (GRK4-DELTA).
PubMed=1338872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Commun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALTERNATIVE .SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Collodel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   199:848-854(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    receptor kinase 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Moretti E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bates G., Altherr M.,
.J., Lehrach H., Housman D.,
                                                                                 Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q15315; Q15316;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Piomboni
                                                                                 Ьy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   from 4p16.3.";
                                                                                  and
                                                                                                                                 a collaboration -
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
.
                                                                                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bу
                                                                               n no way
 EMBL;
EMBL;
EMBL;
EMBL;
HSSP;
MIM;
                                                                                                                                              EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                        EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                       EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                               InterPro;
                                              U33155 p
U33157 p
U33157 p
U33158 p
U33160 p
U33161 p
U33163 p
U33163 p
U33164 p
U33165 p
U33165 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33156 p
U33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     U33168;
U33153;
U33154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U33164;
U33164;
U33165;
U33166;
U33167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             U33156;
U33157;
U33158;
U33159;
U33160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U33168;
U33153;
U33155;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U33161;
U33162;
IPR000239;
IPR000342;
IPR000719;
```

AAC50410

JOINED

JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED

JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED

JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED JOINED

JOINED

. . . . .

JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.
JOINED.

```
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TOPLES
TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              _BUCAI
                                                                                                                                                                                                    STRAIN-TOKYO 1998;

MEDLING-20445173; PubMed-10993077;

Shigenobu S., Wattanabe H., Hattori M., Sakaki Y., Ishikawa H.;

Shigenobu S., Wattanabe H., Hattori M., Sakaki Y., Ishikawa H.;

"Genome sequence of the endocellular bacterial symbiont of aphids Buchnera sp. APS.";

Nature 407:81-86(2000)

-!- FUNCTION: THE REACTION CATALYZED BY TOPOISOMERASES LEADS TO THE CONVERSION OF ONE TOPOLOGICAL ISOMER OF DNA TO ANOTHER.

-!- CONVERSION OF ONE TOPOLOGICAL ISOMER OF DNA TO ANOTHER.

-!- CATALYTIC ACTIVITY: ATP-INDEPENDENT BREAKAGE OF SINGLE-STRANDED DNA, FOLLOWED BY PASSAGE AND REJOINING.

DNA, FOLLOWED BY PASSAGE AND REJOINING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOP1_BUCAI
P57371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BINDING
ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
01-OCT-2000 (Rel. 40, Last annotation update)
DNA TOPOISOMERASE I (EC 5.99.1.2) (OMEGA-PROTEIN) (RELAXING ENZYME)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00069; pkinase; 1.

PRINTS; PR00717; GPCRKINASE.

PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.

PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (UNTWISTING ENZYME) (SWIVELASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=118099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bactería;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       symbiotic bacterium)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Buchnera aphidicola (subsp. Acyrthosiphon pisum) (Acyrthosiphon pisum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fransierase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GKKNGKHNGWK 11
                                                                                        BACKBONE BOND, IT SIMULTANEOUSLY FORMS A PROTEIN DNA LINK, WHICH A TYROSYL OXYGEN IN THE ENZYME IS JOINED TO A DNA PH AT ONE END OF THE ENZYME-SEVERED DNA STRAND.

SIMILARITY: BELONGS TO PROKARYOTIC TYPE I/III TOPOISOMERAS
                                                                                                                                                                                 MISCELLANEOUS: WHEN A TOPOISOMERASE TRANSIENTLY BREAKS A DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GKKSGRSKKWK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PF00615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 6; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PS50132; RGS; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Proteobacteria; gamma subdivision; Buchnera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      splicing;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
52
187
450
193
216
312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Serine/threonine-protein kinase; ATP-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RGS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    449
578
201
216
312
49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             154
172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                66555 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51.4%;
54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Polymorphism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   G -> D (---
CAA66802).
7; 2CF2075EC336E4A1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            V ->
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GRK4-DELTA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C-TERMINAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN KINASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ISOFORM GRK4 - DELTA) .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MISSING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MISSING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-TERMINAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /FTId=VAR_007806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (IN ISOFORM GRK4-BETA AND ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (IN ISOFORM GRK4-GAMMA AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              00;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>,,</u>
                                                                                           I/III TOPOISOMERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAA66468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                        A DNA PHOSPHORUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ISOMETASE;
ACT_SITE
ZN_FING
ZN_FING
ZN_FING
SEQUENCE
                                                                                                                                                                                                                                                           Finnegan E.J., Dennis E.S.;

"Isolation and identification by sequence homology of a cytosine methyltransferase from Arabidopsis thaliana.";

Nucleic Acids Res. 21:2383-2388(1993).

-!- FUNCTION: METHYLATES CG RESIDUES.

-!- CATALYTIC ACTIVITY: S-ADENOSYL-L-HETHIONINE + DNA =

--- HOMOCYSTEINE + DNA CONTAINING 5-METHYLCYTOSINE.

-!- SIMILARITY: LOW, TO OTHER EUKARYOTIC DNA METASE.

-!- SIMILARITY: SOME TO BACTERIAL RESTRICTION SYSTEMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-FEB-1994 (Rel. 28, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
DNA (CYTOSINE-5) METHYLTRANSFERASE ATHI (EC 2.1.1.3
METHYLTRANSFERASE ATHI) (DNA METASE ATHI) (M.ATHI).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ARATH
                                   REBASE; 2839; M.AthI.
InterPro; IPRO01025; -.
InterPro; IPRO01525; -.
Pfam; PF01426; BAH; 2.
Pfam; PF00145; DNA_methylase;
                                                                                                                                            modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                            This
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MTDM_ARATH P34881;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not rementities requires a license agreement
                                                                                                     EMBL; L10692;
                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                                                                                                        use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                 the European Bioinformatics Institute.
                                                                                                                                                                                                                                    METHYLTRANSFERASES.
-!- SIMILARITY: CONTAINS 2 BAH DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATHIM
                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=CV. COLUMBIA;
MEDLINE=93281384; PubMed=8389441;
                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                use by non-profit institutions as l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                839 KKDGKFTGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 KKNGKHNGW 10
                                                                                                                                                                                             SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AP001118; BAB12994.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PS00396;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Topoisomerase;
318 318
318
596 628
658 685
707 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                        AAA32829.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        318
628
685
732
99739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOISOMERASE_I_PROK; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               51.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Œ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA-binding; Zinc-finger.
DNA CLEAVAGE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 38; DB
Pred. No. 87;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C4-TYPE (POTENTIAL).
C4-TYPE (POTENTIAL).
C4-TYPE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     903BBF2EA5265599 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1;
87;
                                                                                                                                                                                  There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                    as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Usage
                                                                                                                                                                      its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1.1.37)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 861;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (DNA
                                                                                                                                                                                   restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restrictions
                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                      putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                    S-ADENOSYL-L-
                                                                                                                                                                                                            ಬ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                 collaboration
L outstation -
                                                                                                                                                                                                outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     commerc:
                                                                                                                                                                      no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                no
no
                                                                                                                                                                                   9
                                                                                                                                                                      way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   its
way
ial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

PRINTS; PR00105; C5METTRFRASE.
PROSITE; PS00094; C5\_MTASE\_1;
PROSITE; PS00095; C5\_MTASE\_2;

ω

```
FT ACT_SITE 138 1198 BY SIMILARITY.

SQ SEQUENCE 1534 AA; 172430 MM; 23PC944AA7074C5A CRC64;

SQ SEQUENCE 1534 AA; 172430 MM; 23PC944AA7074C5A CRC64;

SQ SEQUENCE 1534 AA; 172430 MM; 23PC94AA7074C5A CRC64;

Search Local Similarity 81,3%; Pred Mo 1.5e-02;

Mo 6 KHNGWK 11

Db 1434 RHNGWK 1439

Search completed: July 6, 2001, 09:26:38

Job time: 969 Sec
```

ŧ

.1)

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                        Database
.
                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM protein -
                                                                                                                                                                                                                                                                                                                                                                     Post-processing:
Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                  seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein search, using sw
                                                                 SPTREMBL_16:*
1: sp_archea:*
2: sp_bacteria:
3: sp_fungl:*
4: sp_human:*
5: sp_numan!*
5: sp_mammal:*
7: sp_mhc:*
8: sp_organel1:
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:
12: sp_urclass
13: sp_vertebr
14: sp_virus:**
                                                                                                                                                                                                                                                                                                                                                                                                    length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                     length:
                                                                                                                                                                                                                                                                                                                                 Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-437-912-4
74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                   sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                    sp_mammal:*
                                                                                                                                                                                                                     sp_invertebrate:*
                                                                                                                                                                   sp_organelle:*
                                                               sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                   sp_rodent:*
                                                                                                                                sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6, 2001, 09:25:53; Search time 118.42 Seconds (without alignments) 13.407 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      425026
```

S
₽
3
4
Ĥ
ES

14	5	18	17	16	15	14	13	12	11	10	9	80	7	0	ъ		ω	2	1	No.	Result
<b>.</b>	5	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	43	45	47	Score	
24. L	n :	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	55.4	56.8	56.8	56.8	56.8	56.8	58.1	60.8	63.5		% Query
DET	00	1251	857	552	385	365	359	208	208	145	145	1009	739	294	205	171	516	3898	275	Length 1	
U	n .	σı	10	N	N	10	N	14					N	4	14	ω	ω	14	Ν	DB	
PTWY67	COVETA	016637	Q9SUV0	Q9PML3	P71232	Q9FHA0	Q9L2L5	Q9DRT8	Q9DRT9	Q9JTD9	Q9JYE5	008764	087381	Q9Y521	Q9DRT6	Q9UTT3	Q9P6E6	Q68965	Q9S2U7	ID	
Q9xW14 Caenornabd1		016637 caenorhabdi	Q9suv0 arabidopsis	Q9pml3 campylobact	P71232 escherichia	Q9fha0 arabidopsis	Q91215 streptomyce	Q9drt8 human immun	Q9drt9 human immun	Q9jtd9 neisseria m	Q9jye5 neisseria m	008764 rattus norv	O87381 haemophilus	Q9y521 homo sapien	Q9drt6 human immun	Q9utt3 schizosacch	Q9p6e6 neurospora	Q68965 classical s	Q9s2u7 streptomyce	Description	

45	44	43	42	41	40	39	38	37	36	35	34	ω	32	31	30	29	28	27	26	25	24	23	22	21	20
38	38	38	38	38	38	38	38	38	38	39	39	3 9	39	39	39	39	39	39	39	39	39	39	39	40	40
51.4	51.4	51.4	51.4	51.4	51.4	51.4	51.4	51.4	51.4	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	52.7	54.1	54.1
293	. 221	208	179	141	133	117	67	20	. 20	2294	2042	1879	1755	1361	956	875	872	872	616	560	469	298	132	1430	721
13	σ	11	N	σ	N	N	N	14	14	4	ഗ	4	4	4	4	14	14	14	N	ر.	υ	14	u	ഗ	ω
Q91953	Q9NEU2	Q9WUZ0	Q9RVX2	097905	Q54222	Q54388	Q9R302	Q78509	Q78507	Q9UKH9	Q25766	Q9UKH5	Q9UKH6	Q14273	Q9UP31	Q9WJR5	Q9WIK9	Q9WJR4	Q49182	Q9W526	Q9U1K6	Q9J4N7	Q9N8J0	Q23541	P78810
Q91953 gallus gall	Q9neu2 caenorhabdi	Q9wuz0 rattus norv	Q9rvx2 deinococcus	097905 tursiops tr	Q54222 streptomyce	Q54388 streptomyce	Q9r302 escherichia	Q78509 human immun	Q78507 human immun	Q9ukh9 homo sapien	Q25766 plasmodium	Q9ukh5 homo sapien	homo	Q14273 homo sapien	Q9up31 homo sapien	Q9wjr5 human endog	Q9wik9 human endog	Q9wjr4 human endog		Q9w526 drosophila	Q9u1k6 drosophila	7	Q9n8j0 trypanosoma	Q23541 caenorhabdi	P78810 schizosacch

# ALIGNMENTS

```
RESULT
Q9S2U7
                Qy
                                                                                                                                                                  Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9S2U7 PRELIMINARY;
Q9S2U7;
Q9S2U7;
01-MAY-2000 (TremBLrel. 13, C.
01-MAY-2000 (TremBLrel. 13, L.
01-MAY-2000 (TremBLrel. 13, L.
01-MAY-2001 (TremBLrel. 13, L.
                                                                                                                             Redenbach M., Kieser H.M., Denapaite D., Eichner A., Cullum J., Kinashi H., Hopwood D.A.;

"A set of ordered cosmids and a detailed genetic and physical methe 8 Mb Streptomyces coelicolor A3(2) chromosome.";

Mol. Microbiol. 21:77-96(1996).

EMBL; AL096884; CAB51427.1;

EMBL; AL096884; CAB51427.1;

SEQUENCE 275 AA; 29424 MW; B46AF89DCA186591 CRC64;
                                                                                                                                                                                                                                                                                                            STRAIN=A3(2);
Bentley S.D., Parkhill J., Barrell B.G., Rajandream M.A.;
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=A3(2);
Seeger K.J., Harris D.;
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                              STRAIN=A3(2);
MEDLINE=97000351; PubMed=8843436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Firmicutes; Actinobacteria; Actinobacteridae; Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces. NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Streptomyces coelicolor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SC4G6.04C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-MAY-2000 (TrEMBLrel. 13, Last annotation update) PUTATIVE INTEGRAL MEMBRANE PROTEIN.
                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
3 KNGKHNGW 10
                                                  Conservative
                                                                63.5%;
                                                  0;
                                                 Score 47; DB Pred. No. 3; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        275 AA.
                                                                                 DB 2;
                                                                               Length 275;
                                                  Indels
                                                                                                                                                                                             physical map for
                                                 0
                                                 Gaps
                                                  0;
```

멍

222

KNGKHNSW

Q68965

PRELIMINARY;

PRT;

3898

A

```
В
                                                                                                                                                                                                                                                                                      γ
                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 7
                                                                                                                                                  09P6E6;
01-0CT-2000 (TrEMBLrel. 1:
01-0CT-2000 (TrEMBLrel. 1:
01-MAR-2001 (TrEMBLrel. 1:
RAD57 RELATED PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q68965;
01-NOV-1996
01-NOV-1996
01-MAR-2001
                                                                                                       Neurospora crassa.

Reurospora; Fungi; Ascomycota; Pezizomycotina; Sordariomycetes; Sordariaceae; Neurospora.
                                                                                                                                                                                                                                                                  3270
Submitted (MAY-2000)
                                                     SEQUENCE FROM N.A. Schulte U., Aign V., Nyakatura G., Mewes
                                                                                                                                              B17C10.30.
                                                                                                                                                                                                             Q9P6E6
                                                                                                                                                                                                                                                                                                                                                              SMART; SM00490; HELICC; 1.
ATP-binding; Helicase; Polyprotein.
SEQUENCE 3898 AA; 438268 MW; D167BF5E48B11747 CRC64;
                      SEQUENCE FROM N.A.
                                            Submitted
                                                                                                 NCBI_TaxID=5141;
                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00271; helicase_C; 1.
PRINTS; PR00729; CDVENDOPTASE.
PROSTTE; PS00037; MYB_1; UNKNOWN_1.
PROSTTE; PS00531; RNASE_T2_2; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Muramatsu M., Yamada A.;

"Comparison of the entire nucleotide and deduced of the attenuated hog cholera vaccine strain GPE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SIMILARITY: TO HELICASE C-TERMINAL DOMAIN EMBL; D49533; BAA08477.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ishikawa K., Nagai H., Kata
Takeuchi K., Hishiyama M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Classical swine fever virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      parental strain ALD.*;
Arch. Virol. 140:1385-1391(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001650; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001410; ... InterPro; IPR001568; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001005; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000280; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=95390794; PubMed=7661692;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=11096;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pestivirus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Viruses; ssRNA positive-strand viruses,
                                                                                                                                                                                                                                                                                                            Local Similarity nes 7; Conserv
                                                                                                                                                                                                                                                                                      1 GKKNGKHNGW 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHOLERA VIRUS POLYPROTEIN.
                                                                                                                                                                                                                                                                  GSSLGKHNGW 3279
                                            (MAY-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6 (TrEMBLrel.
6 (TrEMBLrel.
1 (TrEMBLrel.
                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                            Conservative
           genome
                                                      Ξ
                                                     Hoheisel J.,
H.W., Mannhau
ç
                                           ç
                                                                                                                                                                                                                                                                                                                      70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Katayama K.
M., Saitoh
                                                                                                                                                                 15,
15,
                                                                                                                                                                                                                                                                                                                     0.8%;
the
                                            the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01, Created)
01, Last sequence update)
16, Last annotation update)
           project;
                                                      Mannhaupt
EMBL/GenBank/DDBJ databases
                                           EMBL/GenBank/DDBJ
                                                                                                                                                                Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                     Score 45;
Pred. No.
                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                            Mismatches
                                                     Brandt P.,
upt G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Tsutsui M., Tanabayashi K.,
., Takagi M., Gotoh K.,
                                                                                                                                                                                                             516
                                                                                                                                                                                                                                                                                                                     DB
97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                no DNA stage; Flaviviridae;
                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GPE-
                                                                Fartmann
                                           databases
                                                                                                                                                                                                                                                                                                                               Length 3898;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid sequences
- and the wild-type
                                                                                                                                                                                                                                                                                                          Indels
                                                                 8.,
                                                                 Holland
                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                          Gaps
                                                                 ₹.
                                                                                                                                                                                                                                                                                                          0
```

Query Match

56.8%;

Score

42;

DB

14;

Length 205

```
RESULT
Q9DRT6
ID Q9
   В
                                                                                                                                                                                                                                                                                            Ωy
                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
Q9UTT3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DR
DR
DR
SQ
                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                    Q9DRT6:
Q9DRT6;
Q1-MAR-2001
01-MAR-2001
01-MAR-2001
STRAIN-LTS 21E;
Ashton L., Rhodes D., Solomon A., Deacon N., Satchell C., C
Cooper D., Biti R., Stewart G., Kaldor J.;
"Viral diversity in the nef/LTR region of the HIV-1 genome:
associations with long-term nonprogression.";
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF219695; AAG44172.1:
EMBL; AF219695 AA, 23370 MW; 63BB87C97291AB2D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                           Kawamukai
"S. pombe
Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9UTT3;
Q9UTT3;
Q1-MAY-2000
Q1-MAY-2000
Q1-MAY-2000
                                                                                                             Human immunodeficiency vi:
Viruses; Retroid viruses;
NCBI_TaxID=11676;
                                                                                                                                                   NEF
                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                      "S. pombe unknown protein.";
Submitted (SEP-1999) to the
EMBL; AB032716; BAA84655.1;
NON_TER 1 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Schizosaccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Schizosaccharomyces pombe (Fission yeast) Eukaryota; Fungi; Ascomycota; Schizosacch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR001553; -.
InterPro; IPR003593; -.
SMART; SM00382; AAA; 1.
SEQUENCE 516 AA; 55456 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MRNA, PARTIAL CDS (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AL355926; CAB91223.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         489
                                                                                                                                                                                                                                                                                                                    Local Similarity hes 8; Conserv
                                                                                                                                                                                                                                                                       11 KLNGKHKGTKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                                                                   2 KKNGKHNGWKT 12
| |||| |||
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GKKNGKEEGMK 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity 72. 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                            171 AA;
                                                                                                                                                                    (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tremblrel 13, (Tremblrel 13, ) (Tremblrel 13, )
                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                        21
                                                                                                                                                                                                                                                                                                                                                                           19913 MW;
                                                                                                                                                                                                                                                                                                                              56.8%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                             to the EMBL/GenBank/DDBJ databases
                                                                                                                           virus type 1.
es; Retroviridae;
                                                                                                                                                                       16,
16,
                                                                                                                                                                     Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation updat
                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                               Score 42; DE
Pred. No. 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Schizosaccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                           CB35800E91F17E0D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8A1B9CA95D6AA295 CRC64;
                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                   Deacon N., Satchell C., Carr A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43;
                                                                                                                                                                                                                  205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 171
                                                                                                                            Lentivirus
                                                                                                                                                                                                                                                                                                                                         ВВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA
                                                                                                                                                                                                                                                                                                                                          ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   υ
••
                                                                                                                                                                                                                                                                                                                                         Length 171;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 516;
                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
```

Ü

Fri

```
RESULT
Q9Y521
                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
Matches 6; Conserv
           Pfam; PF00593; TonB_bo.
Signal; Plasmid.
SIGNAL
CHAT**
                                                                                                                                                                                                  01-NOV-1998
01-MAY-2000
                                                                                                                                                                                                                    087381;
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                PRINTS; PR00620; HISTONEH2A.
NON_TER 294 294
SEQUENCE 294 AA; 32050 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1999 (TrembLrel. 12
01-NOV-1999 (TrembLrel. 12
01-MAY-2000 (TrembLrel. 13
01-53018.4 (HUMAN ORTHOLOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9Y521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9Y521
                                                   Thomas C.E., Olsen B., Elkins C.; "Cloning and characterization of tdhA, a dependent heme receptor from Haemophilus Infect. Immun. 66:4254-4262(1998).
EMBL; AF052977; AAC35765.1; -.
                                                                                                                                                                                                                                      087381
                                                                                                                                                                                                                                                                                                                                                                                                                                              Mammalia; Eutheria;
NCBI_TaxID=9606;
 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                            Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                            STRAIN=35000;
                                                                                                                                                              Haemophilus ducreyi.
Plasmid pUNCH1204.
                                                                                                                                                                                          TON-DEPENDENT HEME
                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AL035079; CAB45239.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DJ53C18.4.
                                                                                                 MEDLINE=98380372; PubMed=9712775;
                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                   NCBI_TaxID=730;
                                                                                                                                              Haemophilus
                                                                                                                                                       Bacteria;
                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (FRAGMENT).
                                                                                                                                                                                                                                                                                   59
                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                                                                                                   GSMNSRHNSWDT 70
                                                                                                                                                                                                                                                                                                    GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGKGSKHSGWQS 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                     Similarity 50.6; Conservative
                                                                                                                                                      Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                            (MAY-1999)
 739
                                                                                                                                                                                                  (TrEMBLrel.
                                                                                                                                                                                                                   (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
 Ã,
                                   TonB_boxC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12
                                                                                                                                                                                          RECEPTOR
 84293
                                                                                                                                                                                                                                                                                                                                                                  32050 MW;
                                                                                                                                                                                                                                                                                                                                                                                                             to the
                                                                                                                                                                                                                                                                                                                              50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        50.0%;
                                                                                                                                                                                                                                                                                                                              . 08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             12,
12,
                                                                                                                                                                                                  08,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      읁
 MW;
                                                                                                                                                      gamma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
F RAT ANKYRIN REPEAT PROTEIN CCA3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
                                                                                                                                                                                          Þ
                                                                                                                                                                                                  Last sequence update)
Last annotation updat
                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                    Score 42; DB
Pred. No. 22;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                             EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred.
POTENTIAL.
TON-DEPENDENT HEME
F6B92B3B8DC74216
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                          PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                  8D29DD79556B7E3C
                                                                                                                                                     subdivision; Pasteurellaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No.
                                                                                                                                                                                                                                      739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   294
                                                                                                                                                                                                                                                                                                                            DВ
22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15;
                                                                      locus encoding
ducreyi.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A
                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                       4;
                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ψ
                                                                                                                                                                                                                                                                                                                     5.
                                                                                                                                                                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                     Length 294;
          RECEPTOR
                                                                                                                                                                                                                                                                                                                                                                  CRC64;
                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                a
                                                                                TonB-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT
Q9JYE5
                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
"~+~hes 6; Conserv
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                  QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00023; ank; 4.

Pfam; PF00051; BTB; 1.

PROSITE; PS50088; ANK_REPEAT; 3.

PROSITE; PS50297; ANK_REP_REGION; 1.

PROSITE; PS50097; BTB; 1.

PROSITE; PS00018; EF_HAND; UNKNOWN_1.

SMART; SM00225; BTB; 1.

SMART; SM00225; BTB; 1.

SEQUENCE 1009 AA; 111602 MW; E25CE
                                                                                                                                                                    Q9JYE5;
Q9JYE5;
01-OCT-2000
01-OCT-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                008764;
008764;
01-JUL-1997
01-JUL-1997
01-MAR-2001
SEQUENCE FROM N.A.
STRAIN-MC58 / SEROGROUP B;
STRAIN-MC58 / SEROGROUP B;
MEDLINE=20175755; PubMed=10710307;
MEDLINE=20175755; PubMed=10710307;
Tettelin H., Saunders N.J., Heidelberg J., Jeffries A.C., Ne
Elsen J.A., Ketchum K.A., Hood D.W., Peden J.F., Dodson R.J.
Relson W.C., Gwinn M.L., DeBoy R., Peterson J.D., Hickey E.K
Nelson W.C., Gwinn M.L., DeBoy R., Peteischmann R.D., Doughe
Haft D.H., Salzberg S.L., White O., Fleischmann R.D., Doughe
Mason T., Ciecko A., Parksey D.S., Blair E., Cittone H., Cla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FRUM N.A.
MEDLINE-97263491; PubMed-9109406;
Hayashi Y., Ichinose M., Yuasa H., Tatematsu M., Ishi
Hayashi Y., Ichinose M., Yuasa H., Tatematsu M., Ishi
"Cca3, the mRNA level of which transiently decreases
"Cca3, the mRNA level of which transiently decreases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of DNA synthesis in regenerat FEBS Lett. 406:147-150(1997). EMBL; AB000216; BAA19969.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCA3.
                                                                                                          NCBI_TaxID=491;
                                                                                                                      Neisseria meningitidis
Bacteria; Proteobacter
                                                                                                                                               NMB1618
                                                                                                                                                          RIBONUCLEASE HI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus norvegicus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ANKYRIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                            59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N
                                                                                                                                                                                                                                                                                                   1 GKKNGKHNGWKT
                                                                                                                                                                                                                                           9
                                                                                                                                                                                                                                                                             GSMNSRHNSWDT 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KVHGNHNGWE 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR000210; -.
                                                                                                                     meningitidis (serogroup B).
Proteobacteria; beta subdivision;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IPR002110;
                                                                                                                                                                  (TrEMBLrel.) (TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rat).
                                                                                                                                                                                                                                                                                                  12
                                                                                                                                                                                                                                                                                                                                                                                                          EF_HAND; UNKNOWN_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                56.8%;
                                                                                                                                                                                                                                                                                                                                       56.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04,
04,
                                                                                                                                                                    15,
16,
                                                                                                                                                                  Created)
Last sequence up
Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 42; DB
Pred. No. 55;
2; Mismatches
                                                                                                                                                                                                                                                                                                                          ٠.
                                                                                                                                                                                                                                                                                                                                       Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata;
Sciurognathi; Muridae
                                                                                                                                                                                                                                                                                                                                                                                     E25CE5BA846510FA CRC64;
                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1009
                                                                                                                                                                                                                   145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55;
                                                                                                                                                                                                                                                                                                                                       76;
                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                  Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ₽
                                                                                                                                                                               update)
                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2
                                                                                                                      Neisseriaceae;
                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                          5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 739
                                                                                                                                                                                                                                                                                                                                                Length 1009;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ishibashi M.;
                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   before
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Murinae;
    Dougherty B.A.
d., Clark E.B.,
                                                  Nelson
                             ~
                                                                                                                         Neisseria
                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    initiation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus
             В.А.,
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                  K.E.,
                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
RESULT
Q9DRT9
ID Q9
AC Q9
DT 01
DT 01
DT 01
DE NI
GN NI
OS H;
                                                                                                                                                                                                                         Ş
                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local s
Matches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                         Q9DRT9;
                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-MAR-2001 (TrEMBLrel. 16, RIBONUCLEASE HI (EC 3.1.26.4 RNHA OR NMA1817.
                        NEF
                                01-MAR-2001
01-MAR-2001
                                                      01-MAR-2001
                                                                                                                                                                                                                          Hydrolase.
SEQUENCE
                                                                                                                                                                                                                                                                                      Parkhill J., Achtman M., James K.D., Bentley S.D., Churche Klee S.R., Morelli G., Basham D., Brown D., Chillingworth Davies R.M., Davis P., Devlin K., Feltwell T., Hamlin N., Jagels K., Leather S., Moule S., Mungall K., Quail M.A., Rathndream M.A., Rutherford K.M., Simmonds M., Skelton J., Whitehead S., Spratt B.G., Barrell B.G.; "Complete DNA sequence of a serogroup A strain of Neisseri menigitidis Z2491.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Cotton M. Gill J.,
                                                                                                                                                                                                                                                                                                                                                                                                                   Neisseria meningitidis (serogroup A).
Bacteria; Proteobacteria; beta subdivision;
NCBI_TaxID=65699;
  Human
             NEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Science 287:1809-1815(2000).
EMBL; AE002512; AAF41970.1;
TIGR; NMB1618; -.
                                                                                                                                                                                                                                                                                                                                                                          STRAIN=Z2491 / SEROGROUP A / SEROTYPE 4A;
MEDLINE=20222556; PubMed=10761919;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002156; -.
Pfam; PF00075; rnaseH;
SEQUENCE 145 AA; 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Complete genome MC58.";
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ω9√тп9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TIGR; NMB1618;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Smith
                                                                                                                              75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75 KNGMENWIHGWKRNGWKT 92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10
                                                                                                                                                 3 KNG-----KHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KNG-----
                                                                                                                             KNGMENWIHGWKRNGWKT
 immunodeficiency
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   н.о.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M.D.,
                                                                                                                                                                      Similarity 50.0
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .D., Utterback T.R., Khouri H., Qin H., Vamathevan J., Scarlato V., Masignani V., Pizza M., Grandi G., Sch. Scorlato V., Maxignani V., Pizza M., Grandi G., Sch. C., Fraser C.M., Moxon E.R., Rappuoli R., Venter J.C.; e genome sequence of Neisseria meningitidis serogroup
                                                                                                                                                                                                                          145
                                (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                         ŘΑ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rnaseH; 1.
AA; 16251 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -KHNGWKT 12
                                                                                                                                                                                                                          16235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55.4%;
                                                                                                                                                                                  50
 virus
                                                                                                                                                                                . 48;
                                                                                                                                                 12
                                16,
                                                                                                                              92
                                                                                                                                                                                                                          ¥;
                                Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                     Score 41; DB Pred. No. 15; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                      0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
Pred.
                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                          3E2EA6A1317D4171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3E2EA6BED17D5E91 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
                                                                          208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145
                                                                                                                                                                             DB
15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DВ
15;
                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
                                update)
                                                                                                                                                                                                                                                                                                                                                                                                                             Neisseriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                                                                                                         Length 145
                                                                                                                                                                                                                                                                                                   of Neisseria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 145
                                                                                                                                                                                                                          CRC64;
                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                               Churcher C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      serogroup B strain
                                                                                                                                                                                                                                                                                                                                           Holroyd
                                                                                                                                                                                                                                                                                                                                                                                                                              Neisseria
                                                                                                                                                                     8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ŀ.,
                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                     ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <u>ب</u>
```

```
RESULT
QPDRTIA
QPDRTIA
ID QP
AC QP
AC QP
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
DT 01
RN NE
RN NE
RN NE
RN SI
RC SI
RC RT RA AK
RA AK
RT RT RT RT SI
RC SI
RC RT SI
RC RT SI
RC RT RT RT SI
RC RT SI
RC RT RT RT SI
RC RT SI
RC RT SI
RC RT RT RT SI
RC RT SI
RC RT SI
RC RT RT SI
RC RT SI
RC RT SI
RC RT RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC RT SI
RC SI
RC RT SI
RC SI
RC RT SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
RC SI
S
                                                                                                                                                                                                                                                                                                    RESULT
Q9L2L5
    AC OCC OCC RP RRN
                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                       Ω<sub>V</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

STRAINLITS 21C;

Ashton L., Rhodes D., Solomon A., Deacon N., Sat Cooper D., Biti R., Stewart G., Kaldor J.;

"Viral diversity in the nef/LTR region of the HI associations with long-term nonprogression.";

Submitted (DEC-1999) to the EMBL/GenBank/DDBJ da EMBL; AF219693; AAG44170.1;

SEQUENCE 208 AA; 23738 MW; 5B9560E7D4AB85D7
                                                                                                                                                                                               O9L2L5 PRELIMINARY;
O9L2L5;
01-OCT-2000 (TrEMBLrel. 1
01-OCT-2000 (TrEMBLrel. 1
01-OCT-2000 (TrEMBLrel. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9DRT8;
01-MAR-2001
01-MAR-2001
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FRO
                                                                           Streptomyces coelicolor. Bacteria; Firmicutes; Ac Actinomycetales; Strepto NCBI_TaxID=1902;
STRAIN=A3(2);
Oliver K., Ha
                                                                                                                                                             SCC117.05
                                       SEQUENCE FROM
                                                                                                                                                                                  PHOH-LIKE PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human immunodeficiency virus type 1. Viruses; Retroid viruses; Retroviridae; NCBI_TaxID=11676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ashton L., Rhodes D., Solomon A., Deacon N., S
Cooper D., Biti R., Stewart G., Kaldor J.;
"Viral diversity in the nef/LTR region of the
associations with long-term nonprogression.";
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ
EMBL, AF219692; AAG44169.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9DRT8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Viruses; Retroid viruses; NCBI_TaxID=11676; [1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGKGSKHSGWQ 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GKKNGKHNGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAG44169.1; -.
AA; 23738 MW;
                                                                                                  Streptomycineae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5 5
4 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 5
4 5
                                                                                            Actinobacteria; Actinobacteria;
ptomycineae; Streptomycetaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 5 %
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5.4
                                                                                                                                                                                                   15,
15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Retroviridae; Lentivirus
                                                                                                                                                                                                   Last
Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 41; DB Pred. No. 22; 2; Mismatches
                                                                                                                                                                                                                                           Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5B9560E7D4AB85D7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9D55ACE3832763FB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                   sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41;
No.
                                                                                                                                                                                                                                                                                   359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J.;
of the !
'``,";
                                                                                                                       Actinobacteridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DВ
22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lentivirus
                                                                                                                                                                                                                                                                                   ₹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Satchell C., Carr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Satchell C., Carr A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HIV-1 genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HIV-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                Streptomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

(JAN-2000)

ţ

the EMBL/GenBank/DDBJ databases.

```
RESULT
Q9FHA0
ID PFHA0
DT Q9FHA0
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q9
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC Q0
OC 
RESULT
P71232
ID P7
AC P7
DT 01
DT 01
DT 01
DT 01
                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 7
                                                                                                                                                                                                                                                                                                                               Query Match
Best Local (
                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O9FHAD;
O9FHAD;
O1-MAR-2001 (TrEMBLrel. 16, Created)
O1-MAR-2001 (TrEMBLrel. 16, Last sequence update)
O1-MAR-2001 (TrEMBLrel. 16, Last sequence update)
O1-MAR-2001 (TrEMBLrel. 16, Last annotation update)
SIMILARITY TO MAP3K-LIKE PROTEIN KINASE.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
Rrassicales; Brassicaceae; Arabidopsis.
                  01-FEB-1997
01-FEB-1997
01-NOV-1998
                                                                                  P71232
P71232;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted [2]
  NICKASE.
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                           Kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         features of clones.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN-COLUMBIA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9FHA0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "A set of ordered cosmids and a detailed genetic a the 8 Mb Streptomyces coelicolor A3(2) chromosome. Mol. Microbiol. 21:77-96(1996).
EMBL; AL136534; CAB66426.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=97000351; PubMed=8843436; Redenbach M., Kieser H.M., Denapaite D., Kinashi H., Hopwood D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AB020742; BAB10947.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sato S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=A3(2);
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (JAN-2000) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thomson N.R., Parkhill J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA Res.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tabata S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=20181125;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Structural analysis of Arabidopsis thaliana chromosome 5. x. Sequence features of the regions of 3,076,755 bp covered by sixty P1 and TAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         338 GTENGGHNGGRT 349
                                                                                                                                                                                                                   288 KNSKHGFNGWK 298
                                                                                                                                                                                                                                                                                                          Local Similarity
nes 8; Conserv
                                                                                                                                                   15
                                                                                                                                                                                                                                            3 KNGKH--NGWK 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GKKNGKHNGWKT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            l Similarity
7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7:31-63(2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nakamura Y., Kaneko T., Katoh T., Asamizu E.,
                                                                                                                                                                                                                                                                                                                                                                                                                    365 AA;
                  (TrEMBLrel. (TrEMBLrel. (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            359 AA;
                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=10718197;
                                                                                                                                                                                                                                                                                                                                                                                                                    42010 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39146 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   58.3%;
                                                                                                                                                                                                                                                                                                                               55.48;
72.78;
                    02,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 39;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Barrell B.G., Rajandream M.A.; e EMBL/GenBank/DDBJ databases.
                Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                        Score 41; DB Pred. No. 39; 0; Mismatches
                                                                                                                                                                                                                                                                                                          0,
                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EAB26376BF0E45C7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                    0355B09EDE7F9DCC
                                                                                                         385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365 AA.
                                                                                                                                                                                                                                                                                                                          DB
39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DВ
39;
                                                                                                       Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             genetic and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eichner A.,
                                                                                                                                                                                                                                                                                                                                                   10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 359;
                                                                                                                                                                                                                                                                                                                                                   Length 365;
                                                                                                                                                                                                                                                                                                                                                                                                                    CRC64;
                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             physical map
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cullum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kotani H.,
                                                                                                                                                                                                                                                                                                        2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for
                                                                                                                                                                                                                                                                                                        1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
```

```
밁
                  δÃ
                              Query Match
Best Local Similarity
"---hes 7; Conserv:
                                                                                           simultaneously in relaxosomes in vivo.";
J. Mol. Biol. 261:135-143(1996).
EMBL; X95535; CAA64780.1; -.
                                                                                                                                                                 SEQUENCE FROM N.A. MEDLINE=96346167; PubMed=8757282;
                                                                                                                                                                                                           Bacteria; Pı
Escherichia
                                                                                           SEQUENCE
                                                                                                    Plasmid
                                                                                                                                             Avila P., Nunez B., De la Cruz F.; "Plasmid R6K contains two functional oriTs which can assemble
                                                                                                                                                                                                                                Plasmid R6K.
                                                                                                                                                                                                                                          Escherichia coli.
                                                                                                                                                                                                                                                       TAXC.
                                                                                                                                                                                               NCBI_TaxID=562;
312 KNGIQQGWKT 321
                   3 KNGKHNGWKT 12
                                                                                                                                                                                                                      Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                           385 AA;
                                        Conservative
                                                                                           44116 MW;
                                                 55.4%;
70.0%;
                                        0
                                                 Score 41;
Pred. No.
                                                                                           20AB3E8342CCBC17
                                        Mismatches
                                                           41;
                                                DB
42;
                                                             2
                                        ω
--
                                                           Length 385;
                                        Indels
                                       0;
                                       Gaps
```

0,

Search completed: July Job time: 990 sec 6 2001, 09:25:54

• • 

**6** 

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  on:
       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
     seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Issued_Patents_AA:*

1: /cgn2_6/ptodata/2,

2: /cgn2_6/ptodata/2,

3: /cgn2_6/ptodata/2,

4: /cgn2_6/ptodata/2,

5: /cgn2_6/ptodata/2,

6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
     US-09-437-912-5
167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           July 6, 2001, 09:10:22; Search time 56.74 Seconds (without alignments) 9.941 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 193259 segs, 20144635 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HGHEQQHGLGHGHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/FCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/backfiles1.pep:*
     DB
 US-08-686-528A-3
US-09-456-287-3
US-09-456-287-2
US-09-456-287-2
US-09-456-287-2
US-09-456-287-2
US-08-446-345-36
US-08-937-931-2
US-09-285-0577-1
US-09-115-032-1
US-09-115-032-1
US-08-137-614A-26
US-08-072-064-1
US-08-072-064-4
US-08-072-064-8
PCT-US95-0577-1
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-072-064-8
US-08-907-064-081-2
US-08-801-083-82
US-08-801-083-82
US-08-801-083-82
US-08-801-083-82
US-08-801-083-82
US-08-801-083-82
US-08-801-083-92
US-08-400-731A-2
US-08-470-298B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
   Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                              Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
3, Appli
2, Appli
36, Appli
36, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1, Appli
1
```

Qу	3 m O	US:S	
1 101	Query Ma Best Loo Matches	O N GET GET GET GET GET GET GET GET GET GET	00000000000000000000000000000000000000
HGHEQQHGLGHGHKFKLDDDLEHQGGH     : :            : :   HDHDHKHEHKHDHKHDHDHDHDHKHEH	atch cal Simi 10;	528A-3 3, Appl 3, Appl 1 INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFORMA INFOR	4444 4444 440 44444 440 440 440 440 440 440 440 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80 80
HGHKFKLI        HDHKHDHI	34. larity 37. Conservative	on on Sis Sis Sis Sis Sis Sis Sis Sis Sis Sis	135 3 135 3 1477 3 1477 14 312 1 154 1 154 1 2249 1 249 1 345 1 347 1 249
DDDLE     :	1.1%; 7.0%; 7e	Clifford HAEMOPHIL  SS: Doane, Sw Doane, Sw Street, Si Street, Si States Compatible PC-DOS/MS PC-DOS/MS COMPATION: US/08/61 UL:1996 UMATION: Stanek Stanek Stanek NO: 3: UMBER: 03: NO: 3: UMBER: 03: OACIds	59994222047777555 151114433124332
HQGGH 27  :	Score 57; DB 3; Le pred. No. 1.4; 4; Mismatches 13;	US/08686528A  Clifford A. Clifford A. HAEMOPHILUS ADHESIN PROTEIN 4 S: Doane, Swecker & Mathis, L.L. Street, Suite 500  ates  M: y disk ompatible PC-DOS/MS-DOS Release #1.0, Version #1.30 ATA: US/08/686,528A L:1996 4 ATION: Stanek Stanek Stanek Stanek 130,427 MBER: 032609-001 NO: 3: ICS: ICS: ICS: ICS: ICS: ICS: ICS: ICS	US-08-820-825-2 US-08-899-031-1 US-09-307-817-2 US-08-423-752-10 US-08-423-752-10 US-08-945-994-3 US-08-916-873-24 US-08-910-501-2 US-08-910-501-4 US-08-910-501-4 US-08-910-501-4 US-08-910-598-50-2 US-08-8550-2 US-08-8550-2 US-08-8550-2 US-08-102-942A-5 US-08-102-942A-5 US-08-102-942A-2 PCT-US94-07595-2 US-08-102-942A-2 ALIGNMENTS
	Length 313; ; Indels	<del>,</del> <del>,</del>	nhes phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose phose p
,	0;		Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence Sequence
	Gaps		2, Appli 1, Appli 10, Appli 10, Appli 10, Appli 24, Appli 20, Appli 20, Appli 4, Appli 4, Appli 4, Appli 5, Appli 5, Appli 2, Appli 2, Appli 2, Appli 2, Appli 2, Appli 2, Appli 2, Appli 3, Appli 4, Appli 5, Appli 5, Appli 5, Appli 7, Appli
	0;		44464464444

RESULT 2 US-09-456-287-3 ; Sequence 3, Application US/09456287

GENERAL INFORMATION:

TITLE OF INVENTION: CORRESPONDENCE ADDRESS: NUMBER OF SEQUENCES:

LINGWOOD,

HAEMOPHILUS ADHESIN PROTEIN

ADDRESSEE:

```
₽
                                                                                                                                                                                                                                                                                                                                                                                                                US-08-686-528A-2
                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-456-287-3
                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Application US/08686528A Patent No. 6054134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                APPLICANT: LINGWOOD,
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                             CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/686,528A
                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
ATTORNEY/AGENT INFORMATION: NAME: Rea, Teresa Stanek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS: LENGTH: 313 amino acid
                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 НДНДНКНЕНКИДНКИДИДИДИКИЕН 127
                              FILING DATE: 20 CLASSIFICATION:
                                                                                                   SOFTWARE:
                                                                                                                                                                                                                       STATE: Virginia
                                                                                                                                                                                                                                         CITY: Alexandria
                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
TOPOLOGY: lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Alexandria
                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REGISTRATION NUMBER: 30,427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                         TRY: United States 22314-2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity 37.(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             22314-2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rea, Teresa Stanek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Virginia
                                                                                                                                                                                                                                                      E: Burns, Doane, Swecker & Mathis, L.L.P.
1737 King Street, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3: Burns, Doane, Swecker & Mathis, L.L.P.
1737 King Street, Suite 500
                                                                                               PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                         LINGWOOD, Clifford A.
VENTION: HAEMOPHILUS ADHESIN PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein
                                 26-JUL-1996
V: 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US 08/686,528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          us/09/456,287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 57; DB Pred. No. 1.4; 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         032609-001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 4; Length 313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
```

RESULT 5 US-07-945-283-2

```
Вb
                                                         Qy
                                                                                                                                                                                                                                                                            ; TOPOLOGY: 1; MOLECULE TYPE: US-09-456-287-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-456-287-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-686-528A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2, Patent No.
                                                                                                                            Matches
                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 337 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Rea, Teresa Stanek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: LINGWOOD, TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
125 НДНДНКНЕНКИДНКИДНДНДНКИЕН 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                125 НДНДНКНЕНКИДНКНДНДНДНДНКНЕН 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REGISTRATION NUMBER: 30,41
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMBER: (
REFERENCE/DOCKET NUMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release 1.
                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 37.0 ues 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
TOPOLOGY: li
                                                         1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/09/456,287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27

    Application US/09456287
    6218147

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RY: United States 22314-2756
                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1737 King Street, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                337
                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sss: single
linear
                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         amino acids
                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                     single
                                                                                                                                                      34.18;
37.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HAEMOPHILUS ADHESIN PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                34.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Doane,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US 08/686,528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30,427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30,427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Swecker & Mathis, L.L.P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               032609-001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      032609-001
                                                                                                                                                                                  Score 57;
                                                                                                                                                         Pred. No. 1.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 57;
Pred. No.
                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Version
                                                                                                                                                                                  DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #1.30
                                                                                                                                                                                  Length 337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 337;
                                                                                                                         Indels
                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

Sequence 2, Application US/07945283 Patent No. 5352596

GENERAL INFORMATION:

Ronald D.

Pseudorabies Virus Deletion Mutants

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QΨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-446-345-36 ·
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-07-945-283-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 36, Application US/08446345 Patent No. 5831009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07,
FILING DATE: 19920911
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Ribando, Curtis P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: 309-685-4011 ex TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-4128 TELEPAX: 309-685-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Cheung, AN APPLICANT: Wesley, RAPPLICANT: Wesley, RTITLE OF INVENTION: TITLE OF INVENTION: NUMBER OF SEQUENCES:
                             SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Ullrich, Axel
APPLICANT: Moller, Niels P.H.
APPLICANT: Moller, Karin B.
TITLE OF INVENTION: NOVEL PRO'
TITLE OF INVENTION: PHOSPHATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1. STREET: 1.
                                                       COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Palana
                                                                                                                                                                                                                                                                                                                             CITY: New York STATE: N.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        y Match 31.18;
Local Similarity 46.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY:
                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Ribando, Curtis P
REGISTRATION NUMBER: 27976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HGHEQQHGLGHG---HKFKLD--DDLEHQG 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HG---EHGLGHALAVHPVLLDNLDDVVHYG 161
                                                                                                                                                                                                                                                      10036-2711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ħ
                                                                                                                                                                                                                                                                                                                                                                                                    1155 Avenue of the Americas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1815 No. 5352596th University Street
                                                                                                                                                                                                                                                                                               U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                     Pennie & Edmonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          309-685-4011 ext.513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Curtis P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOVEL PROTEIN PHOSPHOTYROSINE PHOSPHATASES PTP-D1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Involving The EPO and LLT Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US/07/945,283
US/08/446,345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ribando
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 52; DB
Pred. No. 52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1958;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
```

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
~~+~hes 12; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TOPOLOGY: unknown ; MOLECULE TYPE: protein US-08-446-345-36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-937-931-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No. 5935792
                                                                                 TELEPHONE: (415) 343-43-
TELEFAX: (415) 343-4342
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 36:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                       COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/937,931
                                                                 SEQUENCE CHARACTERISTICS:
                                                                                                                                     REFERENCE/DOCKET NUMBER: B9
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: OSMAN, RICHARD A
                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Xu, Tian
TITLE OF INVENTION: KUZ: A No. 5935792el Family of Metalloproteases
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 1174 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 30742
REFERENCE/DOCKET NUMBER: 76
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212)790-9090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Coruzzi, Laura A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   686 GPEEAEGLRYGHKKSLSDATMLIHSSEEEEDEDFEEESG 724
                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP STREET: 268 BUSH STREET, SUITE 3200 CITY: SAN FRANCISCO
                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                     STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (212) 869-8864
TELEX: 66141 PENNIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US 08/234,440 FILING DATE: 28-APR-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
              STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                CENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 GHEQQHGLGHGHKFKL-----
                                                                                                                                                                                                                                                                                                                                                                                    94104
                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08937931
                                                                                                                                                                                                                                                                                                                                                                                                                     CALIFORNIA
                                               1239 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                   USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rubin, Gerald M.
Pan, Duojia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rooke, Jenny
Yavari, Reza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
linear
                                                                                                                       (415) 343-4341
                                                                                                                                                                                                                                                                                                                                                Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29.9%;
30.8%;
                                                                                                                                                                      36,627
                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       7683-054
                                                                                                                                                         B97-081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 50;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ---DDDLEHQGG 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

۲.

```
RESULT 9
US-08-255-457-1
                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; MOLECULE TYPE: US-08-937-931-2
; Sequence 1,
                                                                                                                                                                                                            ; MOLECULE TYPE: US-09-285-502-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              망
                                                                                                                                     Matches
                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                          TELEFAX: (415) 343-4342 INFORMATION FOR SEQ ID NO:
                                                                          1004 HGGSRSHHQQHPHDWD----RHQGGH 1025
                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: B9
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 343-4341
                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1004 HGGSRSHHQQHPHDWD----RHQGGH 1025
                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: OSMAN, RICHARD A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Xu, Tian
TITLE OF INVENTION: KUZ: A No. 6190876el Family of Metalloproteases
NUMBER OF SEQUENCES: 10
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
                                                                                                                                  Local Similarity 37.0 ies 10; Conservative
                                                                                                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP STREET: 268 BUSH STREET, SUITE 3200 CITY: SAN FRANCISCO
                                                                                                                                                                                                                                                                                                                                                                                                NAME: OSMAN, RICHARD A REGISTRATION NUMBER: 36,627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                      1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94104
                                                                                                                                                                                                                                                                           amino acid
Application US/08255457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/09285502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CALIFORNIA
                                                                                                                                                                                                                                                                                        1239 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pan, Duojia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rooke, Jenny
Yavari, Reza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rubin,
                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                        single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gerald M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29.0%;
                                                                                                                                                  29.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 08/937,931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09/285,502
                                                                                                                                  Score 48.5; I Pred. No. 94; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 48.5;
Pred. No. 94;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                               DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB
                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10;
                                                                                                                                                                Length 1239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1239;
                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                    ۲;
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qy
                                                                                                                                                                                                                                                                                                                                                                                   US-09-115-032-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: protein US-08-255-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 40.u
                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/09115032 Patent No. 5972348
                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                 TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                        APPLICANT: Plaut, Andrew G
APPLICANT: Gilbert-Rothste
APPLICANT: Wright, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 00:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul C.
NAME: Clark, Paul C.
30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT_APPLICATION_DATA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: 1. 200154
                                                                                          COUNTRY: U.S.A. ZIP: 02110-2804
                                                                                                                               STATE:
                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U.S.A. ZIP: 02110-2804
                                                                                                                                                               ADDRESSEE: Fish & Richardson
STREET: 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Fish & Richardson STREET: 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                        4 НЕЕОНССИННИННИТИННИЧИССЕН 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 HEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                  Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
                                                                                                                             Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plaut, Andrew G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gilbert-Rothstein, Joanne V
                                                                                                                                                                                                                                                                    Wright, Andrew
                                                                                                                                                                                                                                                                                       Gilbert-Rothstein, Joanne V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (617) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.7%;
40.0%;
                                                                                                                                                                                                                                   HELICOBACTER PYLORI NICKEL BINDING PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HELICOBACTER PYLORI NICKEL BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/08/255,457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 48; 1
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

0

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/115,032

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TOPOLOGY: 1i;; MOLECULE TYPE: US-09-115-032-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US95-05772-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application PC/TUS9505772 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul C.
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 00398/090001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
TELEPAX: (617) 542-8906
                                                                                    TELEFAX: (617) 542-890
TELEX: 200154
INFORMATION FOR SEQ ID NO:
                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul C.
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 0039
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEX: 200154
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                           ZIP: UZILO COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

COMPUTER: IBM PC-DOS/MS-DOS

COMPONETING SYSTEM: PC-DOS/MS-DOS
                                               SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Wright, Andrew TITLE OF INVENTION: HELICO TITLE OF INVENTION: BINDIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Plaut, Andrew G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                 FILING DATE:
CLASSIFICATION:
                TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 НЕЕОНССИНИННИННИННИННУНССЕН 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 HEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l: 60 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                           Massachusetts
                                                   60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              225 Franklin Street
                                                                                                                    (617) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gilbert-Rothstein, Joanne V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fish & Richardson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BINDING PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HELICOBACTER PYLORI NICKEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08/255,457
                                                                                                                                                                                                                                                                                  PCT/US95/05772
                                                                                                                                                                             00098/090001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Score 48; DB; Pred. No. 3.8; l; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
3.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
```

```
; NAME/KEY: UNSURE
; LOCATION: (1)..(24)
; OTHER INFORMATION: S
; Patent No. 6030945
US-08-584-031-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
US-08-584-031-8
; Sequence 8, Application US/08584031A
; Patent No. 6030945
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 13
US-08-780-496-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
"hes 9; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT-US95-05772-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 8
LENGTH: 24
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                    Sequence 8, Application US/08780496 Patent No. 6046048 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi J.
TITLE OF INVENTION: APO-2 LIGAND
FILE REFERENCE: 11669.22USO3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION NUMBER: US/08/584,031A CURRENT FILING DATE: 1996-01-09 NUMBER OF SEQ ID NOS: 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE:
                                 FILING DATE: 08-Jan-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Marschang, Diane L
                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5 inch. 1.44 Mb floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: WinPatin (Genettech)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/780,496
                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Genentech,
                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Avi Ashkenazi, Anan Chuntharapai, Kyung Jin TITLE OF INVENTION: Apo-2 Ligand
                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                      STREET: 460 Point San Bruno Blvd
CITY: South San Francisco
STATE: California
NAME: Marschang, Diane I REGISTRATION NUMBER: 35, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                     ZIP: 94080
                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 HHHHHHHSSGH-----IDDDDKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 HGHEQQHGLGHGHKFKLDDDLEH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4 НЕЕОНОСИННИННИТИННИУНОСЕН
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence is synthesized
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27.8%;
39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
   P0978P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 46.5;
Pred. No. 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 48; I
Pred. No. 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5;
3.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ω
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ა
ა
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

TELECOMMUNICATION INFORMATION:

415/225-5416

```
맑
                         γQ
                                                                                                                           ; MOLECULE TYPE: US-08-137-614A-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-780-496-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-137-614A-26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 26 Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 39.1
Conservative
                                                       Matches
                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                             TELEFAX: (716)263-160
                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: Timian, Susan J.
REGISTRATION UNMBER: 34,103
REFERENCE/DOCKET NUMBER: 19
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                    SOPTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/137,614A
FILLING DATE: 15-OCT-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
432 GMGPEHGHGHH-----AHSHGH 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                     TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CITY: Rochester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: Amino Acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: 415/952-9881
                         2 GHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 HGHEQQHGLGHGHKFKLDDDLEH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 HHHHHHHSSGH----IDDDDKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26, Application US/08137614A
5. 5487976
                                                                                                                                                                                                                                                                                                                                                                                                                                              14603
                                                                                                                                                               amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            910/371-7168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Nixon, Hargrave, Devans & Doyle Clinton Square, P.O. Box 1051
                                                                                                                                                                                                                        (716)263-1636
(716)263-1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Henderson,
                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Soderlund, David M. Knipple, Douglas C.
                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Linear
                                                                                                                                        protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene Encoding An Insect
Gamma-Aminobutyric Acid
                                                                   27.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           27.8%;
39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Joseph
                                                                                                                                                                                                             26:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  œ
                                                                                                                                                                                                                                                                19603/120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                   Score 46.5;
Pred. No. 81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 46.5;
Pred. No. 2
                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 3; Length 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (GABA) Receptor Subunit
                                                                                 Length 617;
                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                      7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5;
                                                      Gaps
                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۳
```

```
Search completed: July Job time: 188 sec
                                                                                           В
                                                                                                                             Ωy
                                                                                                                                                                                                                                                           US-08-072-064-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
US-08-072-064-1
                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08072064 Patent No. 6008046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 770,881
FILING DATE: 04-OCT-1991
ATTORNEY/AGENT INFORMATION:
NAME: CARROLL, PETER G.
REGISTRATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: OPHD-00
                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 637 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                             POSITION IN GENOME:
                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: peptide ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION: TELEPHONE: 415/705-8410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: FFRENCH-CONSTANT, RICHARD H.
APPLICANT: JACKSON, MEYER B.
TITLE OF INVENTION: DRUG AND PESTICIDE SCREENING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES:
                                                                                         453 GMGPEHGHGHGHH-----AHSHGH 471
                                                                                                                                                                Local Similarity
nes 10; Conserv
                                                                                                                                                                                                                                                                         CHROMOSOME/SEGMENT: III; polytene subregion 66F MAP POSITION: approximately map unit 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: UPFILING DATE: 19930602
                                                                                                                                                                                                                                                                                                                            ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 94104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                             2 GHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   San Francisco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            220 Montgomery Street,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             415/397-8338
                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              United States of America
                                                                                                                                                                                                                                                                                                                                                                                unknown
                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PETER G. CARROLL
                 6,
                                                                                                                                                                             27.8%;
                 2001, 09:10:22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/072,064
                                                                                                                                                              Score 46.5; I
Pred. No. 84;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPHD-00574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Suite 2200
                                                                                                                                                                                                  DB 3; Length 637;
                                                                                                                                                                  7;
                                                                                                                                                              Gaps
```

۲.

```
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

Run on: 6, 2001, 09:18:00; Search time 73.59 Seconds (without alignments) 28.983 Million cell updates/sec

US-09-437-912-5

Perfect score: 167

Sequence: HGHEQQHGLGHGHKFKLDDDLEHQGGHV

28

Scoring table: BLOSUM62 Gapop 10.0 ,

219241 seqs, Gapext 0.5 76174552 residues

Total number of hits satisfying chosen parameters:

Minimum DB Maximum DB seq length: 2000000000 length:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 s

summaries

Database PIR\_68:\* pir1:\*
pir2:\*
pir3:\*
pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	σ	5	4	w	2	۳	No.	Result
56.5	56.5	57	57	57	57	58	58		59	59.5	60	60.5	60.5	61	61.5	62	62.5	62.5	63.5		65	85	85	91.5		98.5	98.5	167	Score	
33.8	33.8		34.1	34.1	34.1	34.7	34.7	35.3	5	5	5	٥.	36.2	36.5		37.1	7.		38.0	8	8	0	0			٩	59.0	100.0	Match	Query
313	254	670	337	335	213	549	378	457	110	201	191	515	398	735	199	314	1085	535	436	776	2038	621	619	315	290	639	264	644	Length	
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Ľ	_	2	N	N	N	<u>, , , , , , , , , , , , , , , , , , , </u>	BB	
A28444	A31488	F36791	D64049	D38532	T36345	T15506	T49164	S39079	T07618	н82055	D96701	T23089	T02681	T45059	T48099	T35241	S66149	S66148	I49714	T02702	A43742	KGBOH1	KGBOH2	A27115	C27115	A25486	C25486	KGHUH1	ID	
filaggrin precurso	filaggrin - mouse	hypothetical prote	adhesin homolog HI			ς,	tra		4	peptidyl-prolyl ci	unknown protein, 9	hypothetical prote				thetical pa	pipsqueak	gene pipsqueak pro	MHC H-2K/t-w5-link	hypothetical prote	female sterile hom	I MMH	x	phase	n, LMW	¥.	n, HM	gen, HMW pr	Description	

44 45	41 42	38	3 3 3 7 6 5	ωω ωω	30 31
5 5 5 3 3	5 5 5 3 3 3	53.54	, , , , , , ,	55. 5	55.5 55.5
31.7 31.7 31.7	31.7 31.7 31.7	32.3	32.9 6.9	33.2 33.2	33.5 33.2
409 529 1061	18 85 245	389 258	189 283	250 255	439 102 242
222	N N N	000	งงง	22	000
E83992 T08684 S37667	B32473 A45969 T23844	B96635 A48820	C81428 C85838	B35026 A35026	S58327 T30119 H82061
ATP/GTP-binding pr hypothetical prote traC-1 protein - E	histidine-rich pro hemolymph antifung hypothetical prote	hypothetical prote homeobox protein (		1.1	cobalt accumulatio hypothetical prote hypothetical prote

kininogen, HMW precursor [validated] - human

prokininogen low molecular

N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen; prokininogen N;Contains: bradykinin (kallidin I); HMW Kininogen I; HMW kininogen II; low molecula C;Species: Homo sapiens (man) C;Date: 28-May-1986 #sequence\_revision 28-May-1986 #text\_change 08-Dec-2000 C;Date: 28-May-1986 #sequence\_revision 28-May-1986 #text\_change 08-Dec-2000 C;Accession: A01279; A25276; S32422; A91153; A24871; A27899; A27699; A31905; A34030;

R;Ohkubo, I.; Kurachi, K.; Takasawa, T.; Shiokawa, H.; Sasaki, M.
Blochemistry 23, 5691-5697, 1984
A;Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide A;Reference number: A90490; MUID:85122621
A;Accession: A01279

A; Molecule type: mRNA A; Residues: 1-389 < GHK) A; Cross-references: GB: K02566; NID: 9177889 R: Takagaki, Y:; Kitamura, N:; Nakanishi, S: J. Biol. Chem. 260, 8601-8609, 1985 A; Title: Cloning and sequence analysis of cDNAs A; Reference number: A92544; MUID: 85234582 A; Accession: A25276

for human high molecular weight and

A;Molecule type: mRNA
A;Residues: 1-592, 'I', 594-644 <TAK>
A;Residues: 1-592, 'I', 594-644 <TAK>
A;Cross-references: GB:M11437; NID:g186751; PIDN:AAB59550.1; PID:g386852
R;Auerswald, E.A.; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I.
FEBS Lett 321, 93-97, 1993

FEBS Lett. 321, 93-97, 1993
A;Title: Cloning, expression and characterization of human kininogen domain 3.
A;Reference number: \$32422; MUID:93223854

A; Accession: S32422

A; Molecule type: mRNA A; Residues: 'ANSM', 253-377 < AUE>

A;Note: differences are due to known cloning artifacts R;Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch, B.; Muller-Esterl, W. Eur. J. Biochem. 152, 307-314, 1985
A;Title: The amino acid sequence of the light chain of human high-molecular-mass kini A;Reference number: A91153; MUID:86030270
A;Accession: A91153

A; Molecule type: protein A; Residues: 379-644 <LOT>

A;Note: the bradykinin sequence preceding the light chain sequence was not determine R;Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W. Eur. J. Biochem. 154, 471-478, 1986
A;Title: Completion of the primary structure of human high-molecular-mass kininogen A;Reference number: A24871; MUID:86108361 not determined

A; Accession: A24871

A; Molecule type: protein A; Residues: 'Z', 20-380 <KEL1>

A; Title: Amino acid sequence of the A; Reference number: A27899 R;Kellermann, J.; Lottspeich, F.; Henschen, A.; in Kinins IV, Greenbaum, L.M., and Margolius, H light chain Mueller-Esterl, W. .S., ed., pp.85-89, Plenum Press, New of human high molecular mass kininog

kininoge

```
A;Molecule type: protein
A;Residues: 379-389, 'K',390-407, 'Q',409-644 <KEL2>
R;Mindroiu, T.; Carretero, O.A.; Proud, D.; Walz, D.;
Biochem. Biophys. Res. Commun. 152, 519-526, 1988
A;Title: A new kinin molety in human plasma kininogen
A;Reference number: A27699; MUID:88209021
A;Accession: A27699
A;Molecule type: protein
A;Residues: 380-389 <MIN>
R;Maeda, H.; Matsumura, Y.; Kato, H.
R;Maeda, H.; Matsumura, Y.; Kato, H.
Biol. Chem. 263, 16051-16054, 1988
A-Title: Purification and identification of [hydroxy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: protein
A; Residues: 381-389 (KAT2)
A; Experimental source: urine
A; Note: this peptide had Pro-383 modified to
A; Accession: C61495
A; Molecule type: protein
A; Residues: 380-389 (KAT3)
R; Lenarcic, B.; Krasovec, M.; Ritonja, A.; O
FBBS Lett. 280, 211-215, 1991
A; Title: Inactivation of human cystatin C an
A; Reference number: S14303; MUID:91192133
A; Accession: S14447
****Connote the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Residues: 380-389 <MIN>
R; Maeda, H.; Matsumura, Y.; K
J. Biol. Chem. 263, 16051-160
A; Title: Purification and ide
A; Reference number: A31905; M
A; Accession: A31905
A; Molecule type: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; molecule type: protein
A; Residues: 381-389 <MAE>
R; Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
Blochem. Blophys. Res. Commun. 150, 511-516, 1988
A; Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin released from human A; Reference number: A34030; MUID:88106632
A; Accession: A34030
A; Molecule type: protein
                                                                                                                                                                                                                                                                                A; Title: Purification from human plasma o A; Reference number: S68059; MUID:96033974 A; Accession: S68059
                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 450-452,'X',454,'X',456 <LIT>
R; Straczek, J: Maachi, F: le Nguyen, D.;
FEBS Lett. 373, 207-211, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 264-359, N., 361-375 < LEN2>
R; Little, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A; Title: Human mast cell tryptase isoforms:
A; Reference number: S55239; MUID:95251593
A; Accession: S55239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Kato, H.; Matsumura, Y.; Maeda, H.
FEBS Lett. 232, 252-254, 1988
A;Title: Isolation and identification of hydroxyproline analogues of A;Reference number: A61495; MUID:88211869
A;Accession: A61495
A;Molecule type: protein
A;Residues: 380-389 <KAT1>
A;Experimental source: urine
A; Reference number: A; Contents: annotati
                                                                                                                   A; Molecule type: protein
A; Residues: 431 434 <STR>
R; Kitamura, N.; Kitagawa, H.; Fukushima, D.;
J. Biol. Chem. 260, 8610-8617, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: protein
A;Residues: 380-389 <SAS>
R;Residues: 380-389 <SAS>
R;Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok,
Biol. Chem. Hoppe-Seyler 369, 257-261, 1988
A;Title: Human cathepsin B and cysteine proteinase inhibitors
A;Reference number: S02482; MUID:89076517
A;Recession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: this peptide had Pro-383 modified to 4-hydroxyproline A; Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: protein
A; Residues: 1-19;189-192;310-314;381-389 <LEN1>
                                         Structural organization of the hnce number: A92545; MUID:85234583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in human plasma kininogens.
MUID:88209021
                                                                                  human
                                                                                                                                                                                                                                                                                                                                                               of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          of [hydroxyprolyl(3)]bradykinin in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Olafsson,
                                                                                                                                                                                                                                                                                                                                                                                                                                         Becchi, M.; Heulin,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           separation and examination
                                                                                                                                                             Takagaki,
                                                                                                                                                                                                                                                                                                                                                               tetrapeptide that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4-hydroxyproline
                                                                              kininogen gene and a model for its evolut.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        kininogen by human cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ι.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Scicli,
                                                                                                                                                             Y.; Miyata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CPIs) in inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    M.; Turk,
                                                                                                                                                                                                                                                                                                                                                           potentiates
                                                                                                                                                                                                                                                                                                                                                                                                                                         M.H.; Nabet,
                                                                                                                                                             T.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bradykinin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of substrate-spec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            U
                                                                                                                                                                                                                                                                                                                                                               insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                         P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ascitic
                                                                                                                                                                                                                                                                                                                                                                                                                                         Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ij
                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   flu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  plas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ano
```

À

밁

75

HGHQKPHGLGHGHQLKLDDLKQQREDGYDHRHPVGH

```
A;Cross-references: GDB:125256; OMIM:228960
A;Cross-references: GDB:125256; OMIM:228960
A;Map position: 3q27-3q27
A;Introns: 65/3; 102/3; 131/1; 188/3; 224/3; 253/1; 310/3; 346/3; 375/3
C;Superfamily: kininogen; cystatin homology
C;Reywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d
F;11-18/Domain: signal sequence #status experimental <SIG>F;19-644/Product: HMW kininogen I (prokininogen) #status experimental <MATI>F;19-379/Domain: cystatin homology <CYY2>F;19-379/Domain: cystatin homology <CYY2>F;19-379/Domain: cystatin homology <CYY2>F;19-131/Domain: cystatin homology <CYY2>F;19-131/Domain: cystatin homology <CYY2>F;380-389/Product: lysyl-bradykinin (kallidin I) #status experimental <KBDY>F;380-389/Product: bradykinin (kallidin I) #status experimental <CCH>F;380-389/Product: low molecular weight growth promoting factor #status experimental
F;431-434/Product: low molecular weight growth promoting factor #status experimental
F;19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimental
F;19/305/29/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;383/Modified site: Met-Lys (kallikrein) #status experimental
F;389-390/Cleavage site: Met-Lys (kallikrein) #status experimental
F;381-380/Cleavage site: Met-Lys (kallikrein) #status experimental
F;381-370/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;381-380/Cleavage site: Arg-Ser (kallikrein) #status experimental
F;381-370/Binding site: carbohydrate (Asn) (covalent) #status experimental
F;381-380/Cleavage site: Arg-Ser (kallikrein) #status experimental
F;381-380/Cleavage site: Arg-Ser (kallikrein) #status experimental
F;381-380/Cleavage site: Arg-Ser (kallikrein) #status experimental
F;381-380/Cleavage site: Arg-Ser (kallikrein) #status experimental
                                                                                                                                                                                                                                                                                                                       C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #t
C;Accession: C25486
R;Kitagawa, H; Kitamura, N.; Hayashida, H.; Miyata,
J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution
A;Reference number: A92625; MUID:87137443
A;Accession: C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Comment: The HMW kiningen precursor and the LMW form are produced from the same ge C;Comment: Kiningen is a cysteine proteinase inhibitor, takes part in initiation of C;Comment: The glycine/histidine/lysine-rich region of HMW kiningen light chain is i C;Comment: Bradykinin, released from kiningen by kallikrein, is a potent vasodilator xyproline residue is present in the kiningen prior to the release of bradykinin. C;Genetics:
Qy
                                                                                                                                                                                                          A; Residues: 1-264 <KIT>
C; Comment: The nucleotide
C; Superfamily: kininogen;
                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-264 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            K-kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Reference number: A91455; MUID:90255622
A;Contents: annotation; bradykinin
C;Comment: The PMO Fig.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Gene: GDB: KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Pierce, J.V.
                                                                                             Query Match
Best Local
                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Proc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   463
                                                               Local Similarity 50.00 ies 18; Conservative
      1 HGHEQQHGLGHGHKFKLDD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HGHEQQHGLGHGHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HMW precursor - rat (fragment) attus norvegicus (Norway rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 52-57,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1968
                                                                                          59.0%;
50.0%;
                                                                                                                                                                                                          cystatin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .0%;
      ----DLEHQGGH
                                                               Score 98.5; D
Pred. No. 4.4e
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                       was obtain homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 167;
Pred. No. 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                     obtained
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-Mar-1989 #text_change 30-Sep-1993
                                                                                       5; DB 2;
4.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
         27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1;
.8e-15;
s 0;
                                                                                                                                                                                                                                        from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   kininogens
                                                                  6;
                                                                                                                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                                                                                            T.; Nakanishi,
                                                                                                                                                                                                                                        GenBank,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                   the rat kininogen gene family
                                                                                                                                                                                                                                        release
                                                                  9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                               1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
RESULT
A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Kageyama, R.; Kitamura, N.; Ohkubo, H.; Nakanishi, S.
J. Biol. Chem. 262, 2345-2351, 1987
A;Title: Differing utilization of homologous transcription initiation sites of A;Reference number: A25488; MUID:87137465
A;Accession: A25488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Biol. Chem. 262, yayoryyuv, ___, A;Title: Structure and expression of the A;Reference number: A92653; MUID:87250580 A;Accession: C27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 20-Aug-1999
C;Accession: C27115; A25488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Note: the authors translated the codon CAA C; Superfamily: kininogen; cystatin homology C; Keywords: alternative splicing F; 1-18/Domain: signal sequence #status predic F; 19-639/Product: kininogen, HMW I #status predices of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon CAA Picture of the codon Picture of the codon Picture of the codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Picture of the Codon Pict
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N;Contains: bradykinin
C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08
                                                                                                                                                                         밁
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:J02662; NID:g205071; PIDN:AAA41483.1; PID:g205072 C;Superfamily: kininogen; cystatin homology F;19-65/Domain: cystatin homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R;Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution A;Reference number: A92625; MUID:87137443
   major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-48 < KAG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-290 <FU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        R;Fung, W.P.; Schreiber, G.
T. Biol. Chem. 262, 9298-9308, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;142-253/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;19-131/Domain: cystatin homology <CY1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Accession: A25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Accession: A25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         K-kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Residues:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kininogen, HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
acute phase alpha-1 protein 1 -
                                                                                                                                                                         124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
nes 18; Conserv
                                                                                                                                                                                                         1 HGHEQQHGLGHGHKFKLDD------DLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HGHQKPHGLGHGHQLKLDDLKQQREDGYDHRHPVGH 485
                                                                                                                                                                         NGHQKPHGLGHGHKHKLDDLKQQRDDGYNYRHPMGH 159
                                                                                                                                                                                                                                                                                                          Similarity
17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1-639 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L-290 <FUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LMW precursor - rat (fragments)
                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cystatin homology <CY2>
                                                                                                                                                                                                                                                                                                                                              54.8%;
47.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          homology <CY2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 98.5; D
Pred. No. 1.1e
3; Mismatches
                                                                                                                                                                                                                                                                                                          Score 91.5; D
Pred. No. 4.3e
4; Mismatches
rat (fragments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-Mar-1989 #text_change 15-Nov-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              predicted
                                                                                                                                                                                                                                                                                                                                                  4.3e-05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2;
.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   for residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for major acute
                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                              6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T.; Nakanishi, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <MAT>
                                                                                                                                                                                                                                                                                                                                                                           Length 290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the rat kininogen gene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       as Asn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        phase alpha-1-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9;
                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
```

```
J. Biochem. 67, 313-323, 1970
A;Title: Studies on the structure of bovine A;Reference number: A91923; MUID:70180420
A;Molecnia turn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;ACCESSION. ....
A;Molecule type: protein
A;Residues: 387-455 <HAN>
A;Note: 398-Pro, 401-Val, and 455-Lys were also found
A;Note: "" · romiva, M.; Iwanaga, S.; Suzuki, T.
A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 106-256, 'XX', 257-376 A; Residues: 'Z', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20-104, 'E', 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinin C;Species: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun C;Accession: A01282; A91923; A91941; A91938; B29559
                                                                                                                          A;Title: Bovine high molecular weight kininogen. A;Reference number: A92627; MUID:87137530 A;Accession: B29559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J. Biol. Chem. 262, 9298-9308, 1987
A;Title: Structure and expression of the A;Reference number: 892653; MUID:87250580
A;Accession: A27115
                                                                                                                                                                                                                                                    A; MoLecule type: protein
A; Residues: 456-496 <AA2>
A; Residues: 456-496 <AA2>
T; Hashimoto, N.; Kato,
J. Biol. Chem. 262, 2768-2779, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Studies on the primary structure of bovine high-molecular-weight kininogen A;Reference number: A91938; MUID:75170265 A;Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R; Han, Y.N.; Komiya, M.; Iwa
J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A91941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R;Han, Y.N.; Kato, H.; Iwanaga, S.; Suzuki, T.
J. Biochem. 79, 1201-1222, 192
A;Title: Primary structure of bovine plasma high-molecular-weight kininogen.
A;Reference number: A91941; MUID:76260155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein A; Residues: 376-391 < KAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: GB:V01492; GB:K01758; NID:g493; R;Kato, H.; Nagasawa, S.; Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-619 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Accession: A01282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Kitamura, N.; Takagaki, Y.; Furuto, Nature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KGBOH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Superfamily: kininogen; cystatin homology
F;19-65/Domain: cystatin homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Gene: MAP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-315 <FUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Fung, W.P.; Schreiber, G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Accession: A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Species: Rattus norvegicus (Norway rat)
C; Date: 31-Mar-1989 #sequence_revision 31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               148 NGHQKPHGLGHGHKHKLDDLKQQRDDGYNYRHPMGH 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity hes 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A single gene for bovine high molecular weight nce number: A93317; MUID:84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGHEQQHGLGHGHKFKLDD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HMW II precursor - bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 91.5; DB 2;
Pred. No. 4.7e-05;
4; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S.; Tanaka,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -DLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31-Mar-1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      kininogen:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             for
                                                <SUE>
        Foertsch,
                                                                                                                                                                                                                      The
                                                                                                                                                                                                                                                                                                    H.; Hayashida, H.; Miyata, T.; Iwana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            T.; Nawa, H.; Nakanishi, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         major
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change 16-Jul-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIDN:CAA24736.1; PID:g494
                                                                                                                                                                                                                 amino acid sequence,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 315;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and low molecular weight kini
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acute
    В.;
    Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         phase alpha-1-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                 positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
```

```
F;19-376/Product: HMW kininogen II #status predicted <a href="Mailto:HMW kininogen II heavy chain #status experimental <hc/>
F;19-376/Product: HMW kininogen II heavy chain #status experimental <hc/>
F;19-130/Domain: cystatin homology <cvi>F;141-252/Domain: cystatin homology <cvi>F;261-372/Domain: cystatin homology <cvi>F;261-372/Domain: cystatin homology <cvi>F;261-372/Domain: cystatin homology <cvi>F;261-372/Domain: cystatin homology <cvi>F;27-386/Product: bradykinin (kallidin II) #status experimental <br/>
F;37-386/Product: bradykinin (kallidin II) #status experimental <br/>
F;37-386/Product: bradykinin (kallidin II) #status experimental <br/>
F;37-639/Product: hMW kininogen II light chain #status experimental <br/>
F;387-649/Product: hMW kininogen II light chain #status experimental <br/>
F;387-649/Product: hMW kininogen II light chain #status experimental <br/>
F;387-649/Product: hMW kininogen II light chain #status experimental <br/>
F;387/Balloding site: carbohydrate (Asn) (covalent) #status absent<br/>
F;387-649/Product: hMW kininogen II light chain #status absent<br/>
F;387-649/Product: hMW kininogen II light chain #status experimental <br/>
F;387-649/Product: hMW kininogen II light chain #status experimental <br/>
F;387-649/Product: hMW kininogen II light chain #status experimental <br/>
F;387-649/Product: light chain #status experimental <br/>
F;387-649/Cleavage site: Arg-Ser (kallikrein) #status experimental <br/>
F;386-800/404,510/Binding site: carbohydrate (Ser) (covalent) #status experimental <br/>
F;397,518-92-534,546,551,568/Binding site: carbohydrate (Ser) (covalent) #status experimental <br/>
F;464-607/Planyana site: Arg-Fer (kallikrein) #status experimental <br/>
F;466-607/Planyana site: Arg-Fer (kallikrei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    R; Sueyoshi, T.; Miyata, T.; Seikagaku 56, 808, 1984
A; Title: Disulfide bonds in A; Reference number: A94300
A; Contents: annotation; disu A; Note: article in Japanese C; Comment: The HMW kininogen C; Comment: Kininogen is a cy C; Comment: Bradykinin, relea
                                                                                                                                                                                                                                                                                                                                                                                                                                               kininogen, HMW I precursor - bovine
N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen
N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokinino
C;Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-
C;Accession: A01281; A91923; A91938; A29559
R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanis
Nature 305, 545-549, 1983
                                                                                                                              A; Title: Studies on the structure of bovine A; Reference number: A91923; MUID: 70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               xyproline residue is present in the kininogén prior to C;Superfamily: kininogen; cystatin homology C;Keywords: alternative splicing; blood coagulation; cy F;1-18/Domain: signal sequence #status predicted <SIG> F;19-619/Product: HMW kininogen II #status predicted <M F;19-376/Product: HMW kininogen II heavy chain #status F;19-130/Domain: cystatin homology <CY1>
                                 A; Molecule type: protein A; Residues: 378-393 < KAT
                                                                                                A; Reference number: A91923; A; Accession: A91923
                                                                                                                                                                                                                           R;Kato,
                                                                                                                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-621 <KIT>
                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A; Accession: A01281
                                                                                                                                                                                                                                                            A; Cross-references: GB: V01491;
                                                                                                                                                                                                                                                                                                                                                                                                                        A; Title: A single gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title: The amino acid sequence of the light chain of human high-molecular-mass kininoc Reference number: A91153; MUID:86030270
                                                                                                                                                                                             Kato, H.; Nagasawa, S.; Suz
Biochem. 67, 313-323, 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contents: annotation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         article in Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HGHQKQHGLGHGHK - - -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kininogen is a cysteine proteinase inhibitor, takes part in initiation of t
The glycine/histidine/lysine-rich region of HWW kininogen light chain is im
Bradykinin, released from kininogen by kallikrein, is a potent vasodilator,
residue is present in the kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The HMW kiningeen precursor is produced from the same gene as the LMW form
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                          A93317;
   Ξ
:.
                                                                                                                                                                                                                                                                                                                                                                                          for bovine high molecular 317; MUID:84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           bovine cleavage sites;
T.; Kato, H.; Iwanaga,
Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arg-Thr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in bovine HMW kininogens
                                                                                                                                                                                                                       Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 68;
                                                                                                                                                                                                                       GB:K01757; NID:g491; PIDN:CAA24735.1; PID:g492
ki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -нснсн 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (kallikrein) #status
   s.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
Suzuki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   No.
                                                                                                                                                            kininogen:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      00073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bovine
S.
                                                                                                                                                                                                                                                                                                                                                                                                                 weight and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T.; Nawa, H.; Nakanishi,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            carbohydrate
                                                                                                                                                            cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                              low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               prokininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             proteinase inhibitor; dup
                                                                                                                                                                                                                                                                                                                                                                                                                 molecular weight kinino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22-Jun-1999
                                                                                                                                                            of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            binding sites
                                                                                                                                                            disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                            bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        n of the
                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             th
a
                                                                                                                                                                                                                                                                                                                                                                                    Ъ
                                                                                                                                                                                                                                                                                                                                                                                                                                            QУ
                                                                                                                                                                                                                                                         A43742
                                                                                                                                                                                                                    female sterile homeotic protein,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eur. J. Biochem. 152,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                    463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity nes 15; Conser
Mozer, B
246-257,
   1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            50.9%;
```

1

```
A; Noticelles: allocation.

A; Notice: article in Japanese

C; Comment: The HMW kininogen precursor is produced from the same gene as the LAW form

C; Comment: The HMW kininogen precursor is produced from the same gene as the LAW form

C; Comment: The glycine/histidine/lysine-rich region of HAW kininogen light chain is i

C; Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator

xyproline residue is present in the kininogen prior to the release of bradykinin.

C; Superfamily: kininogen; cystatin homology

C; Seywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d

F; 19-621/Product: HAW kininogen I heavy chain #status experimental <HCH>

F; 19-100/Domain: cystatin homology <CY2>
F; 19-379/Product: HAW kininogen I heavy chain #status experimental <HCH>
F; 19-380/Product: HAW kininogen I heavy chain #status experimental <HCH>
F; 380-381/Product: bradykinin (kallidin I) #status experimental <HCH>
F; 380-381/Product: bradykinin (kallidin I) #status experimental <HCH>
F; 380-31/Product: HAW kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental <HCH>
F; 380-621/Product: haw kininogen I ight chain #status experimental F; 380-621/Product: haw kininogen I ight chain #status experimental F; 380-621/Product: haw kininogen I ight covalent) #status experimental F; 380-621/Product: haw kininogen I ight covalent) #status experimental F; 380-621/Product: haw kininogen I ight covalent) #status experimental F; 380-400/S20-524-536-548-53-570/Binding site: carbohydrate (Far) 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         J. Biochem. 77, 55-60
A; Title: Studies on 1
A; Reference number: 2
A; Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecure 1770.

A;Residues: 458-498 <HAN>

A;Residues: 458-498 <HAN>

R;Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato,

J. Biol. Chem. 262, 2768-2779, 1987

J. Biol. Chem. 262, 2768-2779, 1987

A;Title: Bovine high molecular weight kininogen.

A;Title: Bovine high molecular weight kininogen.
C;Species: Drosophila melanogaster C;Date: 03-Mar-1993 #text_change C;Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change C;Accession: A43742; B43742 C;Accession: A43742; B43742 C;Accession: A43742; B43742 Dey, N.; Dawid, I.B.
                                                                                                                                         N;Alternate names: membrane protein N;Contains: female sterile homeotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
Seikagaku 56, 808, 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A:Reference number: A92627; MUID:87137530
A:Accession: A29559
A:Molecule type: protein
A:Residues: 'Z',20-123, I',125-127, 'I',129-378 <
R:Lottspeich, F.; Kellermann, J.; Henschen, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number: A94300 A; Contents: annotation; disulfide bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Title: Disulfide bonds in bovine HMW kininogens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 HGHEQQHGLGHGHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the primary structure A91938; MUID:75170265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                       НGHGH 481
                                                                                                                                                                                        205K – fruit fly (Drosophila
ein fsh, 205K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 85; DB
Pred. No. 0.00
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of bovine high-molecular-weight kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
J.00073;
J.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <SUE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Foertsch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The amino acid sequence, positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Η.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hayashida,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₩.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        in, is a potent vasodilator
release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proteinase inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Muller-Esterl,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Η.,
                                                                          20-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (covalent) #status
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Miyata, T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the LMW form itiation of the chain is i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  experi
de bond
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kini
```

76 HGHGGGHGGGHQIGHFSDSDDDIEEGIKHV 105

```
A;Gene: fsh
A;Gene: fsh
A;Cross-references: FlyBase:FBgn0004656
C;Superfamily: unassigned bromodomain proteins; bromodomain homology
C;Keywords: alternative splicing; transmembrane protein
F;1-2038/product: female sterile homeotic protein, 205K #status predicted
F;1-1106/product: female sterile homeotic protein, 110K #status predicted
F;59-116/pomain: bromodomain homology <BRO1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:AC005313; NID:g3548797; PID:g3548806
A;Experimental source: cultivar Columbia
A;Experimental source: cultivar Columbia
R;Lin, X.; Kaul, S; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.
M.; KOO, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; Vanhken, S.E.; Umayam, L.; Tallon,
euss, D.; Mierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Description: Arabidopsis thaliana chromosome II BAC T18E12 genomic sequence A;Reference number: Z14702 A;Accession: T02702
                                      Ş
                                                                                                                                                                                                                                                                                                                            A; Map position: 2
A; Introns: 219/1; 340/2; 387/1; 417/2; 503/3; 538/3; 603/3; 698/3;
A; Note: T18E12.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of A;Reference number: A84420; MUID:20083487
A;Accession: A84446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Accession: T02702; A84444 Kaul, S.; R;Rounsley, S.D.; Lin, X.; Kaul, S.; submitted to the EMBL Data Library, submitted to the Library in the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Title: The Drosophila fsh locus, a maternal effect homeotic gene, encodes apparent mem A;Reference number: A43742; MUID:89276730 A;Accession: A43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-776 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1-776 < RC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      hypothetical protein At2g03240 [imported] - Arabidopsis thaliana hypothetical protein T18E12.9 N;Alternate names: hypothetical protein T18E12.9 C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 24-Mar_1999 #sequence_revision 24-Mar-1999 #text_change 02-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-1106 <HA2>
A; Cross-references: EMBL: M23222
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Gene: At2g03240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:AE002093; NID:g3548806; PIDN:AAC34478.1; GSPDB:GN00139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:M23221; NID:g157452; PIDN:AAA28540.1; PID:g157453
A;Accession: B43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-2038 <HAY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Status: translated from GB/EMBL/DDBJ
                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local Similarity
                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGHGHKFKLDDDLEH 23
HGHEQQHGLGH--GHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HGHGHGHGHGHGYGGSSSLKH
                                                                                                                       1 Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1-776 <ROU>
                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                          38.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kaul, S.; Shea, T.P.; Fujii, C.Y.; Mason, T.M.; Shen,
                                                                                                                       1;
                                                                                                                                                          Score 64; DB 2
Pred. No. 0.65;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 65;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       September 1998
                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the plant Arabidopsis thaliana.
                                                                                                                       12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                Length 776;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2038
                                                                                                                       Indels
                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C.M.; Venter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AMAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <MA2>
                                                                                                                       1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C.Y.;
lon, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
```

```
RESULT
S66149
                                                                                                        gene pipsqueak protein A long form - fruit fly (Dro C;Species: Drosophila melanogaster C;Date: 28-Oct-1996 *sequence_revision 13-Mar-1997 C;Accession: S66149; S66150; T45461 R;Weber, U.; Siegel, V.; Mlodzik, M. EmBO J. 14, 6247-6257, 1995
                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: pipsqueak
C;Superfamily: POZ domain homology
F;21-123/Domain: POZ domain homology <POZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: S66148
R;Weber, U.; Siegel, V.; Mlodzik, M.
EMBO J. 14, 6247-6257, 1995
A; Molecule type: DNA
A; Residues: 1-1085 <
                                 A; Status: preliminary
                                                       A; Reference number: A; Accession: S66149
                                                                                             A; Title:
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
A; Residues: 1-535 <WEB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Title: pipsqueak encodes a novel nuclear A; Reference number: S66148; MUID: 96134923 A; Accession: S66148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene pipsqueak protein A short form - fruit fly (D: C;Species: Drosophila melanogaster C;Date: 28-0ct-1996 #sequence_revision 13-Mar-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: A putative A; Reference number: A; Accession: I49714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R; Han,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MHC H-2K/t-w5-linked ORF precursor
C;Species: Mus musculus (house mouse)
C;Date: 02-Aug-1996 #sequence_revisic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references: EMBL: X90986; NID: g1149498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:M32010; NID:g193738; PIDN:AAA37767.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-436 < RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary; translated from GB/EMBL/DDB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MO1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Accession: I49714
                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 44.4
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cell. Biol. 10, 138-145, 1990
                                                                                                                                                                                                                                                                                                      332 HEHEHNHGHGHGH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity hes 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              82
                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                            1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 HGHEQQHG-----LGHGHKFKLDDDLEHQGGH 27
                                                                       pipsqueak encodes a novel nuclear nce number: S66148; MUID:96134923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HAHSHDHGHSREELHHGHSHGHSHDSLHHGGH 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
<WEB>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                transmembrane protein with histidine-rich I49714; MUID:90097821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             #sequence_revision 02-Aug-1996 #text_change 05-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38.0%;
40.6%;
                                                                                                                                                                                                                                                                                                                                                                                               37.48;
                                                                                                                                                                                                                                                                                                                                                                                0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                      -GGH 347
                                                                                                                                                                                                                                                                                                                                                                                               Score 62.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 63.5;
                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                         protein
                                                                                                                                                                                                       fly (Drosophila melanogaster)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0.42;
                                                                                                                                                                                                                                                                                                                                                                                               DB
.71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIDN:CAA62473.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Drosophila melanogaster)
                                                                                                                                                                                                                                                                                                                                                                                                                 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14;
                                                                                         required
                                                                                                                                                                    #text_change 01-Dec-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 required
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                           downstream of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 downstream
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PID: 9309286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   charge clusters encoded
                                                                                                                                                                                                                                                                                                                                                                              11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PID:g1149499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of seven-up
                                                                                         seven-up
                                                                                                                                                                                                                                                                                                                                                                              بسر
• •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲,
```

```
hypothetical protein T20010.200 - Arabidopsis thaliana C:Species: Arabidopsis thaliana (mouse-ear cress) C:Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 20-Apr-2000
                                  R;Obermaier, B.; Ottenwaelder, B.; Duchemin, D.; Zeitler, submitted to the Protein Sequence Database, April 2000
                                                                                                                                                RESULT
T48099
                                                                                                                                                                                                                                                                                                                                                                                           A:Molecule type: DNA
A;Residues: 1-314 <SEE>
A;Cross-references: EMBL:AL031515; PIDN:CAA20646.1; GSPDB:GN00070; SCOEDB:SC5C7.34
A;Experimental source: strain A3(2)
C;Genetics:
A;Gene: SCOEDB:SC5C7.34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R:Seeger, K.J.; Harris, D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A. submitted to the EMBL Data Library, September 1998 A; Reference number: Z21572 A; Accession: T35241 A; Status: preliminary; translated from GB/EMBL/DDBJ A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein SC5C7.34 SC5C7.34 - Streptomyces coelicolor C:Species: Streptomyces coelicolor C:Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 05-Nov-1999 C:Accession: T35241
                                                                       C; Accession:
                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Introns: 427/3
C;Function:
C;Function:
A;Description: required for establishing polarity
C;Superfamily: POZ domain homology
E;21-123/Domain: POZ domain homology <POZ>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession:
                   A; Reference
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Fitle: The Drosophila pipsqueak gene encodes a nuclear BTB-domain-containing protein A; Reference number: 22972; MUID:96232300 A; Accession: T45461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: El
A;Accession: S66150
A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Map position: II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: pipsqueak; psq
                                                                                                                                                                                                                                                                                                                       Best
                                                                                                                                                                                                                                                                                                                                                                                         Genetics:
Gene: SCOEDB:SC5C7.34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   332 НЕНЕНИНСИСИСН---
                                                                                                                                                                                                                             18
                                                                                                                                                                     14
                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                1 HGHEQQHGLGHGH 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                             ненеоененен зо
                   number:
T48099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                         T48099
                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                     Z24484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL: x90986; NID: g1149498; PIDN: CAA62474.1; PID: g1149500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37.4%;
                                                                                                                                                                                                                                                                                                                       37.1%;
76.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   --GGH 347
                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                    Score 62; DB 2; Pred. No. 0.47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 62.5;
Pred. No. 1
                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of the developing egg chamber
                                                                                                                                                                                                                                                                                                  Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                     Length 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1085;
                                                                                                                                                                                                                                                                                                  Indels
                                                   K.; Mewes, H.W.; Rudd,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PID:g1203907
                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    <HOR>
                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
```

Search completed: July Job time: 647 sec

6

2001, 09:18:01

0

```
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-199 <OBE>
A;Cross-references: EMBL
A;Experimental source: C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                        R;Wilson, R.; Ainscough, R.; Anderson, K.; Baynes, C.; Berks, M.; Bonfield, J.; Burto raser. A.; Fulton, L.; Gardner, A.; Green, P.; Hawkins, T.; Hillier, L.; Jier, M.; Jo B.; O'Callaghan, M.; Parsons, J.; Percy, C.; Rifken, L.; Roopra, A.; Saunders, D. Nature 368, 32-38, 1994
A;Authors: Shownkeen, R.; Sims, M.; Smaldon, N.; Smith, A.; Smith, M.; Sonnhammer, E. tock, L.; Wilkinson-Sproat, J.; Wohldman, P. A;Title: 2.2 Mb of contiguous nucleotide sequence from chromosome III of C. elegans.
    밁
                                     Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hypothetical protein Y39B6B gg [imported] - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 21-Jul-2000 C;Accession: T45059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T45059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Map position: 3
A; Introns: 163/2
A; Note: T20010.200
                                                                                                                                                                                                                                                         A; Experimental source: clone Y39B6BC; Genetics:
                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-735 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                    A;Reference number: S43531; MUID:94150718
A;Accession: T45059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ωy
                                                                                                                                                                                         A; Note: Y39B6B.gg
                                                                                                                                                                                                                                   A; Map position: 3
                                                                                                                                                                                                                                                                                                  A;Cross-references: EMBL:AL132896; NID:g6434440; PIDN:CAB60938.1; PID:g6434473
                                                                                                                                                                                                                                                                                                                                                              A; Status: preliminary; translated from GB/EMBL/DDB:
                                                                                                                                                                                                                 A; Introns:
                                                                                                    Query Match
Best Local
                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
    516
                                                                                Local Similarity
mes 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92 HGHGRGHGHGHGHGHRRHGRDHRHGRDRGHHRGH 125
                                          1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 HGHEQQHGLGHGHKFKLDD-----DLEHQGGH
НGHHGEHGTHHGHHGEHHHAPAHHGHH 542
                                          HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                               18/1; 69/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13;
                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL:AL163816
ce: cultivar Columbia; BAC
                                                                                                    36.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36.8%;
38.2%;
                                                                                                    Score 61;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 61.5; DB Pred. No. 0.34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27
                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone T20010
                                                                                  14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12;
                                                                                                                          Length 735;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               199;
                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                                                Gaps
```

۲,

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          No
        Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score
    100.0

50.9

420.9

420.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.9

38.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               July 6, 2001, 09:26:38; Search time 37.59 Seconds (without alignments) 25.516 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        93435 seqs, 34255486 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-437-912-5
167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                            644
639
661
619
621
693
2038
    DB
                                                                                                                                                                                                                                                                                                                                                                                            KNG_MOUSE
KNH2_BOVIN
KNH1_BOVIN
CAUP_DROME
FSH_DROME
KE4_MOUSE
                                                                                                           TRC5_ECOLI
D29B_ARATH
ZNT1_MOUSE
ZNT1_RAT
                 SLYD_AERHY
HSF8_LYCPE
CH38_DROME
BAF1_KLUMA
PO3A_XENLA
Z255_HUMAN
                                                                                                                                                                         ANTF_SARPE
TRC4_ECOLI
                                                                                                                                                                                                      KE4_BRARE
BOX5_NOTVI
                                                                                                                                                                                                                                     S109_RABIT
KE4_HUMAN
HYPB_BARAJA
HYPB_RHOCA
ZNUA_HAEIN
VG50_HSVI1
COT1_YEAST
FILA_MOUSE
                                                                                                                                                                                                                                                                                                                                                             CSUP_DROME KE4L_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93435
                                                                                                                                                                                                                                                                                                                                                                                         008677 mus musculu
P01045 bos taurus
P01044 bos taurus
P01044 bos taurus
P54269 drosophila
P13709 drosophila
Q31125 mus musculu
                              P27190
Q06737
Q60738
Q62720
Q62720
Q62721
P41153
P67183
P33293
P31365
   Q9uid9
Q16825
                                                                                                                                                                       P11088
Q9pub8
P53771
Q08617
P27189
                                                                                                                                                                                                                                                    P44526
Q00130
P32798
                                                                                                                                                                                                                                                                                                                 P50117
Q92504
Q45257
                                                                                                                                                                                                                                                                                                                                                                              Q9v3a4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P08934 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P01042 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                                                                                                            5 mus musculu
4 drosophila
7 caenorhabdi
xenopus lae
homo sapien
homo sapien
                                           7 sarcophaga
9 escherichia
0 escherichia
0 escherichia
mus musculu
0 rattus norv
1 aeromonas h
1 ycopersico
3 drosophila
3 kluyveromyc
                                                                                                                                                                                                    7 oryctolagus
4 homo sapien
7 bradyrhizob
1 rhodobacter
6 haemophilus
1 ictalurid h
8 saccharomyc
6 mus musculu
8 brachydanio
1 notophthalm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
```

# ALIGNMENTS

RL RP RA RT	RA RA	RA RA RA RA RA RA RA RA RA RA RA RA RA R	RA RT T	R R R R R R R R R R R R R R R R R R R	RE RE RE RE RE RE RE RE RE RE RE RE RE R	XOO OOO DE DO DO DO DO DO DO DO DO DO DO DO DO DO	KNG_HUI ID KI AC P( DT 2)
27:52-57(1968). NDS. Miyata T., Kato H., Iwanaga S Donds in bovine HMW Kininogens.	ENCE OF INE=9025	SEQUENCE OF 379-644.  MEDLINE=86030270; PubMed=4054110;  MEDLINE=86030270; PubMed=4054110;  Lottspeich F., Kellermann J., Henschen A., Foertsch B.,  Mueller-Esterl W.;  "The amino acid sequence of the light chain of human high-molecular- mass kininogen.";  Eur. J. Biochem. 152:307-314(1985).	SEQUENCE OF 1-401 FROM N.A.  SEQUENCE OF 1-401 FROM N.A.  SEQUENCE OF 1-401 FROM N.A.  MEDLINE-85122621; PubMed-6441591;  Ohkubo I., Kurachi K., Takasawa T., Shiokawa H., Sasaki M.;  "Isolation of a human cDNA for alpha 2-thiol proteinase inhibitor and its identity with low molecular weight kininogen.";  Biochemistry 23:5691-5697(1984).	[2] GENE STRUCTURE. MEDLINE-65234:83; PubMed=2989294; Kitamura N., Kitagawa H., Fukushima D., Takagaki Y., Miyata T., Nakanishi S.; "Structural organization of the human kininogen gene and a model for its evolution.", J. Biol. Chem. 260:8610-8617(1985).	[1] SEQUENCE FROM N.A. (ISOFORMS HMW AND LMW). TISSUE=Liver; MEDLINE=68234582; PubMed=2989293; Takagaki Y., Kitamura N., Nakanishi S.; "Cloning and sequence analysis of cDNAs for human high molecular weight and low molecular weight prekininogens. Primary structures of two human prekininogens."; U. Biol. Chem. 260:8601-8609(1985).	(Rel. 40, Last annotation (RECURSOR (ALPHA-2-THIOL )  (RECURSOR (ALPHA-2-THIOL )  (Recursor)  (Recursor)  (Recursor)  (Alpha-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	TRESULT 1  KNG_HUMAN  ID KNG_HUMAN STANDARD; PRT; 644 AA.  AC P01042; P01043;  DT 21-JUL-1986 (Rel. 01, Created)  DT 01-FEB-1996 (Rel. 33, Last sequence update)

```
THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TERM OF THE TE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL M11438 | H1522 | H1523 | H1523 | H1523 | H1525 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1526 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | H1527 | 
                                                                                                                                                                                                                                                                                                                                                                                              PIR; B25276; B
PIR; S02482; S
SWISS-2DPAGE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HELPING TO DECEMBER INHIBITORS OF THIOL PROTEASES; (2)

HAWT KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI INTERPRETATION OPTIMALLY PREKALLIKREIN AND FACTOR XI RETTO
FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-
INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE
BRADYKININ THAT IS RELEASED FROM HMW-KININOGEN SHOWS A VARIETY OF
PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR
PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF
OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION,
INDIRECTLY VIA ENDOTHERLIUM DERIVED RELAXING FACTOR ACTION); (5)
LAW-KININOGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LAW-
KININOGEN IS IN CONTRAST TO HAM-KININOGEN NOT INVOLVED IN BLOOD
                            CHAIN
CHAIN
                                                                                                                                          Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN.
PROSTIE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Repeat; T
Bradykinin; Blood coagulation;
                                                                                                SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Seikagaku
                                                                                                                          Alternative
                                                                                                                                                                                                                                                                                                                                                                     MIM; 228960;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. The use by non-profit institutions as long
                                                                                                                                                                                                                                                                                                 InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 between
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: PLASMA.
TISSUE SPECIFICITY: PLASMA.
PTM: BRADYKININ IS RELEASED FROM KININGEN BY
PTM: BRADYKININ 3 CYSTATIN-LIKE DOMAINS.
SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                  ; B25276;
; S02482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HMW
PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLOTTING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               K02566;
M11437;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           56:808-808(1984).
                                                                                                                   splicing.
                                                                                                                                                                                                                                                                                                                                                                                                                                  KGHUL1.
B25276.
S02482.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KGHUH1.
A25276.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB59550 1.
AAB59550 1.
AAB59550 1.
AAB59550 1.
AAB59550 1.
AAB59550 1.
AAB59550 1.
AAB59550 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
AAB59551 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; AAA35497.1;
; AAB59550.1;
; AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                     P01043; HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB59551
   18
644
380
389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
KININOGEN.
KININOGEN HEAVY CHAIN
BRADYKININ.
                                                                                                                                                Thiol protease inhibitor; Vasodilator; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SHOWN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ВY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HERE) AND LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ជ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                no
```

```
밁
                                                                                                                                                                                                          Qy
                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 28
                                   gene ram
J. Biol.
                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                     KNG_RAT STANDARD; PRT; 639 AA. P08934; P08933; 01-NOV-1988 (Rel. 09, Created) 01-NOV-1988 (Rel. 09, Last sequence update) 01-OCT-2000 (Rel. 40, Last annotation update) KININOGEN PRECURSOR (CONTAINS: BRADYKININ).
                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID DISULFID DISULFID
                                                                                          Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                 VARSPLIC CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                               MOD_RES
Furuto-Kato S., "Primary structu
                                                       SEQUENCE FROM N.A. (ISOFORMS HMW AND LM MEDLINE=87137443; PubMed=3029068; Kitagawa H., Kitamura N., Hayashida H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
DOMAIN
              MEDLINE=86008264; PubMed=2413018;
                      SEQUENCE FROM
                                                                                    NCBI_TaxID=10116;
                                                                                                                 KNG.
                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                            REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REPEAT
REPEAT
                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                      VARSPLIC
                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                          Differing expression patterns and pene family.";
                                                                                                                                                                                              463
                                                                                                                                                                                                          1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                         N
                                                                                                                                                                                            HGHEQQHGLGHGHKFKLDDDLEHQGGHV 490
                                                                                                                                                                                                                               Similarity
                                    Chem.
                                                                                                                                                                                                                                                           644
                                                                                                                                                                                                                        100.0%; ilarity 100.0%; Conservative
                                                                                                                                                                                                                                                                                     262:2190-2198(1987)
                                                                                                                                                                                                                                                           AΑ;
       Matsumoto A.,
                                                                                                                                                                                                                                                          644
593
71945
                      (LMW ISOFORM).
                                                                                                                                                                                                                                                                                     ¥
  mRNAS
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                         VSPPHTSMAPAQDEERDSGKEQGHTR ->
PEKAGAEPASEREVS (IN ISOFORM LA
MISSING (IN ISOFORM LMW).
T -> I (IN REF. I).
; 3132B4CBAF8FBB7E CRC64;
                                                                                                                                                                                                                                                                                                                                                          N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
HIS-RICH (ASSOCIATED WITH CLOTTING
Kitamura N.,
NAs encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                               PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                           Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                               Score 167; DB 1;
Pred. No. 2.9e-15;
                                                                                                                                                                                                                         Mismatches
                                                 evolution
                                                                      EMW).
                                                                                                                                                                                                                                                                                                                                                          (GLCNAC.
(GLCNAC.
(GLCNAC.
        z
                                                        Miyata
       Nakanishi
                                                 of.
                                                         Τ.,
                                                 the
                                                                                                                                                                                                                                     Length 644;
                                                                                                                                                                                                                         Indels
                                                        Nakanishi
                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                 rat kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACID
        s
                                                                                                                                                                                                                                                                                EME)
                                                                                                                                                                                                                                                                                      SHLRSCEYKGR
                                                                                                                                                                                                                        0;
                                                        s.;
                                                                                           Rattus
                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                         0
```

```
DR EMBL; L129428; AAAA1486.1; -.
DR EMBL; M11884; AAAA1487.1; -.
DR EMBL; M14369; AAAA1484.1; -.
DR EMBL; M14369; AAAA1485.1; ALT_SEQ.
DR EMBL; M14369; AAAA1485.1; -.
DR PIR; A280486; A25486.
DR PIR; A28055; A28055; -.
DR InterPro; IPR002010; -.
InterPro; IPR002395; -.
InterPro; IPR002395; -.
IN FPGNO311; CySTANIN; 3.
DR PFAM; PP000311; CySTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PROSITE; PS00287; CYSTANIN; 2.
DR PT ON TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO THE TO TH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=87137465; PUDMEGU-SULLUCUS,
Rageyama R., Kitamura N., Ohkubo H., Nakanishi S.;
Rageyama R., Kitamura N., Ohkubo H., Nakanishi S.;
"Differing utilization of homologous transcription initiation si
"Of rat K and T kininogen genes under inflammation condition.";
of rat K and T kininogen genes under inflammation condition.";
J. Biol. Chem. 262:2345-2351(1987).

J. Biol. Chem. 262:2345-2351(1987).

-i- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES;
-i- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES.

-i- FUNCTION: (1) KININOGENS AND IMPORTANT ROLE IN BLOOD COAGULATION ENTRY OF TAPPOR XI NI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HAW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO
FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMBIN-AND PLASMIN-
INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE
BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS A VARIETY OF
PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH MUSCLE
CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR
PERMEABELITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF
OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT
INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION); (5)
LMW-KININGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMW-
KININGEN IS IN CONTRAST TO HMM-KININGEN NOT INVOLVED IN BLOOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=WISTAR; TISSUE=Liver; MEDLINE=87137465; PubMed=3818598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fung W.-P., Schreiber G.;
"Structure and expression of the genes for major acute phase alpha 1-
protein (thiostatin) and kininogen in the rat.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-41 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-BUFFALO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        bradykinin and T-kinin. Structural relationship of kininogens with major acute phase protein and alpha 1-cysteine proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=87250580;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN. MISCELLANEOUS: RAT EXPRESS FOUR TYPES OF KININOGENS: THE CLASSICAL HMW/LMW KININOGENS AND TWO ADDITIONAL LMW-LIKE KININOGENS: T-I AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Chem. 260:12054-12059(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     262:9298-9308(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=2439509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HMW (SHOWN HERE) AND LMW; ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (4F) IT HAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , (2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sites
```

```
RESULT 3
KNG_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KNG_MOUSE STAN

008677; 008676;

01-0CT-2000 (Rel. 4

01-0CT-2000 (Rel. 4

01-0CT-2000 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARSPLIC CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PEPTIDE
CHAIN
HMW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLKREIN AND FACTOR XI (3) HMW-KININGEN INHERST THE THROMBIN AND PLASMIN-
INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE
BRADYKININ THAT IS RELEASED FROM HMW-KININGEN SHOWS A VARIETY OF
PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
MEDIATOR OF INFLAMMATION DEAUSES (4E1) INCREASE IN VASCULAR
PERMEABILITY, (4E2) STINULATION OF NOCICEPTORS (4E3) RELEASE OF
OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION),
INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION); (5)
LMW-KININGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMM-
                                                                                                                                                                                                                                                                                                                  STRAIN-C57BL/6 x CBA; TISSUE=Liver; Takano M., Kondoh J., Yayama K., Okamo Molecular cloning of cDNAs for mouse
                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KNG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-OCT-2000 (Rel. 40, Last annotation update) KININOGEN PRECURSOR [CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                         Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                               kininogen.";
                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. (ISOFORMS HMW AND LMW).
                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   450 HGHQKPHGLGHGHQLKLDDLKQQREDGYDHRHPVGH 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 HGHEQQHGLGHGHKFKLDD----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 434
61
639 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 40, Created)
(Rel. 40, Last seq
(Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   639
61
70933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INTERCHAIN (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 98.5; D
Pred. No. 5.1e
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MISSING (IN ISOFORM LMW).
E -> K (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CEYKGRLLKAGAGPAPERQAEASTVTP (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KININOGEN LIGHT
                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -> K (IN REF. 2).
D3172DF94FF56AF5
                                                                                                                                                                                                                                                                                                                                     Okamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              661
                                                                                                                                                                                                                                                                                                                    oto H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .1e-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27
                                                                                                                                                                                                                                                                                                                    and high-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                    molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                            HAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ۲,
```

```
KNH2_BOVIN
ID KNH2_B
AC P01045
DT 21-JUL
DT 21-JUL
                                                                                                   Qγ
                                                                                 Дb
                                                                                                                                                                          Matches
KNH2_BOVIN
P01045;
21-JUL-1986
21-JUL-1986
                                                                                                                                                                          VARSPLIC
SEQUENCE
                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                      DISULFID DISULFID DISULFID
                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE; PS00287; CYSTATIN; 1.
Glycoprotein; Plasma; Repeat; Thiol protease inhibitor; Vasodilator; Bradykinin; Blood coagulation; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MGD; ]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00031; cystatin; 3. PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long modified and this statement is not removed entitles requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                Alternative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                 460
                                                                                                   1 HGHEQQHGLGHGHKFKLD------DDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KININOGEN IS
CLOTTING (BY
SUBCELLULAR L
ALTERNATIVE P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PTM: BRADYKININ IS RELEASED FROM KININOGEN BY SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS; HAW
PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
                                                                                HGHQKPHGLGHGHQLKLDYLRHQREDGDDHTHTVGH 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MGI:1097705; Kng.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D84415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D84435;
                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR002395; -
IPR003243; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR000010;
                                                                                                                                                                          433
661 AA;
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                               splicing
                                                                                                                        Conservative
                                                                                                                                                                                                               380
389
19
136
258
439
83
83
107
1141
1205
2205
327
327
350
350
68
228
3327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IS IN CONTRAST TO HMW-KININOGEN NOT INVOLVED IN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BAA19742.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BAA19743.1; -.
                               STANDARD;
01,
                                                                                                                                                                                                               661
73102
                                                                                                                                  58.4%;
50.0%;
          Created)
 Last sequence update)
                                                                                                                                                                          ĭ,
                                                                                                                        Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                is not removed.
                                                                                                                                 Score 97.5; DB 1;
Pred. No. 7.3e-06;
                                                                                                                                                                          MISSING (IN ISOFORM LMW) 774460258D58796E CRC64
                                                                                                                                                                                                    N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
VSPPYIAREQEERDAETEQGPTHGHGWLHEKQ ->
CEYKGRLSKAGAEPAPERQAESSQVKQ (IN ISO)
                                                                                                                                                                                             (MM)
                                                                                                                                                                                                                                                                                                                                                                CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                           CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                   KININOGEN LIGHT CYSTATIN-LIKE 1
                                                                                                                                                                                                                                                                                                                                             INTERCHAIN (BY
                                                                                                                                                                                                                                                                                                                                                       HIS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                  KININOGEN
                              PRT;
                                                                                                                                                                                                                                                              Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
Y SIMILARITY.
                                                                                                                        Mismatches
                              619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                HEAVY CHAIN
                                                                                                                                           DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (SHOWN HERE)
                                                                                                                                                                                                                                                                                                                                             SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Usage
                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                        6,
                                                                                                                                                                          CRC64;
                                                                                                                                          Length 661;
                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                he EMBL outstation restrictions on it
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and
                                                                                                                                                                                                      (IN ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for
                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BLOOD
                                                                                                                                                                                                              -> RLLRA
                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        no
                                                                                                                       ۲.
```

```
HUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
HWA-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HWW-KININGEN INHIBITS THE THROMBIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE
PEPTIDE BRADYKININ THAT IS RELEASED FROM HWW-KININGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STINULATION OF NOCICEPTORS (4E3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ

OCTION INDUCEDING AND CAUSES (4E3)
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                  ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDILINE-76260155; PubMed-956151;
Han Y.N., Kato H., Iwanaga S., Suzuki T.;
"Primary structure bovvine Jusama high-molecular-weight kininogen.
The amino acid sequence of a glycopeptide portion (fragment 1)
following the C-terminus of the bradykinin moiety.";
J. Blochem. 79:1201-1222(1976).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Studies on the primary structure of bovine high-molecular-weight kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.

MEDLINE=84014106; PubMed=6571699;

Kitamura N., Takagaki Y., Furuto S., Tanaka T.,

"A single gene for bovine high molecular weight
weight kininogens.";

Nature 305:545-549(1983).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Bovine high molecular weight kininogen. The amino acid positions of carbohydrate chains and disulfide bridges i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=87137530; PubMed=3546295;
Sueyoshi T., Miyata T., Hashimoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000 (Rel.
KININOGEN, HMW II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=75170265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 456-496.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 387-455.

 Biochem.

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen: cleavages of disulfide bonds and of methionyl bonds in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Miyata T., Iwanaga S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 19-376.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 376-391.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=70180420;
                                                     PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                           SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HAW II AND LAW II KININOGEN PRECURSORS
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                          TISSUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Y.N., Komiya M., Iwanaga
                                                                                                           TO RESIDUE 398
                                                                                                                                                                                                                         ACTION,
                                                                                                                                                                                                      ACTION)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        portion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chem.
                                                                                          SPECIFICITY: PLASMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Bovine)
                                                                                                                                                                                                                         INDIRECTLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   262:2768-2779(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=1169237;
M., Iwanaga S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed-4986212;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  40, Last annotation update) PRECURSOR (THIOL PROTEINASE INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Τ.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chordata; Craniata; Vertebrata; Cetartiodactyla; Ruminantia; Pe
                                                                                                                                                                                                                         VIA ENDOTHELIUM-DERIVED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kato H.,
                                                                                                                                                                                                                         RELAXING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hayashida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nawa
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pecora;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in the hea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , Nakanishi molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
```

```
SCCOSEEDDD AND
                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                    SOFT THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPE
                                                                                                                                                             KNH1
                                                                                                                                                                                                              В
                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID DISULFID DISULFID
                                                                                                                                                           LT 5
                                                                                                                                                                                                                                                                                                                                                VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
                       Bos taurus (Bovine).
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                             21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
01-JUR-1994 (Rel. 29, Last annotation update)
KININOGEN, HMW I PRECURSOR (THIOL PROTEINASE INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
Bovidae; Bovinae; NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                     DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                          DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                       DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; V01492;
EMBL; V01492;
                                                                  KININOGEN, F
BRADYKININ].
                                                                                                                                                KNH1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIGNAL
                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Inflammatory response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP; P04129; 1AFI
                                                                                                                                                                                                              461
                                                                                                                                                                                                                                         _
                                                                                                                                              BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A01282; KGBOH2.
B29559; B29559.
                                                                                                                                                                                                              HGHQKQHGLGHGHK-----HGHGH 479
                                                                                                                                                                                                                                       HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PF00031; cystatin; 3.
                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000010; -.
                                                                                                                                                                                                                                                                                                                                    619
                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAA24736.1; -.
CAA24737.1; ALT_SEQ.
                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chordata; Craniata; Vertebrata; Euteleostomi; Cetartiodactyla; Ruminantia; Pecora; Bovoidea
                                                                                                                                                                                                                                                                                                                                  68710 MW;
                                                                                                                                                                                                                                                                             50.9%;
55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC A
N-LINKED (GLCNAC. . . ).
                                                                                                                                                                                                                                                                Score 85; DB Pred. No. 0.00 2; Mismatches
                                                                                                                                                                                                                                                                   2,
                                                                                                                                                                                                                                                                                                                                             # C H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED (GLCNAC. . N-LINKED (GLCNAC. . N-LINKED (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OR 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BRADYKININ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INTERCHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KININOGEN,
                                                                                                                                                                                                                                                                                                                                 -> P.
-> V.
-> K.
F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CHAIN.
                                                                                                                                              621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MMH
                                                                                                                                              ĄΑ
                                                                                                                                                                                                                                                                               .00033
                                                                                                                                                                                                                                                                                         Length 619;
                           Pecora; Bovoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .) (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACID
                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                ۲.
 PIR;
PIR;
                                                                                                                                                                                                                                                                                                                                 <del>+ +</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               bonds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kato
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cha in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biol.
                                                                                                                                                                                                                                                                                                                                                           ACTION)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          portion."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chem.
```

```
Pfam; PF00031; Cystatin; 3.
PRINTS; PR00334; KININGEN.
PROSTIE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Duplication; Vasodilator; Alternative Thiol protease inhibitor; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                         the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Han Y.N., Komiya M., Iwanaga S., Suzuki T.;
"Studles on the primary structure of bovine high-molecular-weight kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Blochem. 77:55-68(1975).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HMW-KININGEN PLAYS AN INHIBITORS OF THIOL PROTEASES; (2)
HMW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGGLATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT
TO FACTOR XII; (3) HMW-KININGEN INHIBITS THE THROMBIN- AND
PLASMIN-INDUCED AGGREGATION OF THROMBOUTS; (4) THE ACTIVE
PEPTIDE BRADYKIXIN THAT IS RELEASED FROM HMW-KININOGEN SHOWS
A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH
MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C)
NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL,
(4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE
IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4B3)
RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS),
(4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ
ACCITON, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 458-498
MEDLINE-75170265; Page 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sueyoshi T., Miyata T.
Miyata T., Iwanaga S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kitamura N., Takagaki Y., Furuto S., Tanaka T., "A single gene for bovine high molecular weight weight kininogens.";
Nature 305:545-549(1983).
[2]
                                                                                                                                                                                                      PIR; A01281; KGBOH1.
PIR; A29559; A29559.
InterPro; IPR000010; ~.
                                                                                                                                                                                                                                                                                                          EMBL; V01491; CAA24735.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 378-393. MEDLINE=70180420; Pu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Bovine high molecular weight kininogen. The amino acid positions of carbohydrate chains and disulfide bridges i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 19-378. MEDLINE-87137530; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE=84014106; PubMed=6571699;
                                                                                                                                                                        InterPro; IPR002395; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WEDLINE=70180420; PubMed=4986212;
Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen:
conds and of methionyl bonds in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biochem. 67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN. SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUBCELLULAR LOCATION: EXTRACELLULAR.

ALTERNATIVE PRODUCTS: HMW I AND LMW I KININOGEN PRECURSORS PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNJ SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TO RESIDUE 400
TISSUE SPECIFIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPECIFICITY: PLASMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    262:2768-2779(1987)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=3546295;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=1169237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hashimoto N., Kato H., Hayashida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nawa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Η.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sequence,
in the heavy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Η.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nakanishi S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MRNA
AL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      disulfide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (2)
N<sub>.</sub>BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ARE
```

```
RESULT 6
CAUP_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 15; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
CARBOHYD
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PEPTIDE
CHAIN
DOMAIN
This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bjoinformatics Institute. There are no restruce by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entities requires a license agreement (See http://www.isb-s or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                  P54269;
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOD_RES
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
                                                                                                                                                                                  Gomez-Skarmeta J.-L., del Corral R.D., de la Ferres-Marco D., Modolell J.; "Araucan and caupolican, two members of the
                                                                                                                                                                                                                                                                                                                   HOMEOBOX PROTEIN CAUPOLICAN.
                                                                                                                                                                                                                                                                                                                                                                         CAUP_DROME
                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=96180722; PubMed=8620542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Inflammatory
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                             463
                                                                                                                                                                                                                                                                                                                                                                                                                                                Н
                                                                                   FUNCTION: CONTRÓLS PRONEURAL AND VEIN FORMING GENES. POSITIVE TRANSCRIPTIONAL CONTROLER OF ACT-SC (ACHASTE-SCUTE). MAY ACT AS A ACTIVATOR THAT INTERACTS WITH THE TRANSCRIPTIONAL COMPLEX ASSEMBLED ON THE AC AND SC PROMOTERS AND PARTICIPATES IN TRANSCRIPTION INITIATION.

SUBCELLULAR LOCATION: NUCLEAR (PROBABLE).

SIMILARITY: BELONGS TO THE TALE/IRO FAMILY OF HOMEOBOX PROTEINS.
                                                                                                                                                            de homeoproteins that control 85:95-110(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                        HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                            HGHQKQHGLGHGHK------HGHGH 481
                                                                                                                                                                                                                                                                                                                             (Rel. 34,
(Rel. 34,
(Rel. 40,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              response;
                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                             40, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . 6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 85;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
INTERCHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
PYRROLIDONE CARBOXYLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PARTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROBABLE
                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HEAVY CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D16850BEFE3C55CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                        proneural
                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                        693 AA.
          (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                        de la Calle-Mustienes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 1;
0.00033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MMH
                                                                                                                                                                        and
                                                                                                                                                                                    novel iroquois complex,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 621
                                                                                                                                                                        vein-forming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .) (PARTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACID
                                            restrictions
                      and for
                                                       EMBL outstation
                                                       a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8;
                                                                                                                                                                       genes.";
                                   in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                        commercial
                                   on
                                             on
                                                                                                                                         A
                                 way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲.
```

```
RESULT 7
FSH_DROME
ID FSH_D
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                      EMBL; M23221; AAA28540.1; ALT_TERM.
EMBL; M23222; AAA28541.1; ALT_TERM.
EMBL; M15762; AAA70424.1; -
EMBL; M15763; AAA70423.1; -
EMBL; M15763; AAA70422.1; -
EMBL; M15764; AAA70422.1; -
PIR; A43742; A43742.
HSSP; P04002; 1WFA.
                                                                                                                               modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FSH_DROME STANDARD; PRT; 2038 AA.
P13709; P13770;
O1-JAN-1990 (Rel. 13, Created)
O1-JAN-1990 (Rel. 13, Last sequence update)
O1-OCT-1996 (Rel. 34, Last annotation update)
FEMALE STERILE HOMEOTIC PROTEIN (FRAGILE-CHORION MEMBRANE PROTEIN).
FS(1)H OR FSH.
                                                                                                                                                                                                                                         -!- FUNCTION: REQUIRED MATERNALLY FOR PROPER EXPRESSION OF HOMEOTIC GENES INVOLVED IN PATTERN FORMATION, SUCH AS -!- SIMILARITY: HIGH, TO HUMAN RING3 PROTEIN.
-!- SIMILARITY: CONTAINS 2 BROMODOMAINS.
-!- SIMILARITY: CONTAINS 1 ET DOMAIN.
                                                                                                                                                                                                                                                                                                             "The Drosophila fsh locus, a maternal effect homeotic gene, encodes apparent membrane proteins.";
Dev. Biol. 134:246-257(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DOMAIN
                                                                                                                                                                                      the European Bioinformatics Institute.
                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00046; homeobox; 1. PROSITE; PS00027; HOMEOBOX_1; PROSITE; PS50071; HOMEOBOX_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; X95178; CAA64485.1; HSSP; P02833; 1SAN.
                                                                                                                                                                                                                                                                                                                                                         Haynes S.R., Mozer B.A., Bhatia-Dey N., Dawid
                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transcription regulation; DNA-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001356;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FlyBase; FBgn0015919; caup
                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE=89276730; PubMed=2567251;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  656 HGHGHGLGHGH-----GLGHGHGHM 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                         non-profit
                                                                                                                                                                                                    the Swiss Institute of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      al protein.
226 288
300 303
405 418
501 516
517 528
565 572
613 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         288
303
418
516
528
572
624
                                                                                                                                                                          institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73749 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   42.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POLY-GLN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLY-HIS.
POLY-SER.
POLY-SER.
8E0D6D43C9CDC619 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HOMEOBOX (TALE-TYPE).
POLY-ASP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homeobox; Nuclear protein;
                                                                                                                                                                         There are no restrictions ng as its content is in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
0.029;
                                                                                                                                                                                                                                                                                                   EXPRESSION OF
                                                                                                                                                                                                                                                                                                                                                         I.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 693
                                                                                                                                                                                                   and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                     EMBL outstation
                                                                                                                                                                                                                                                                                                   OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1;
```

FBgn0004656; fs(1)h. ; IPR001487; -.

PRINTS; PR00503;

bromodomain;

BROMODOMAIN

```
RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RESCUENT RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KE4_MOUSE S
Q31125; Q9Z1W1;
Q1-NOV-1997 (Rel
                                                     the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
VARIANT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1997 (Rel. 35, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HISTIDINE-RICH MEMBRANE PROTEIN KE4.
                                                                                                                                                                                                                                     Rowen L., Qin S., Madan A., Loretz C., James R., Dors Hall J., Lasky S., Hood L.; "Sequence of the mouse major histocomaptibility locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                      "A putative transmembrane protein with histidine-rich charge clusters encoded in the H-2K/tw5 region of mice."; mol. Cell. Biol. 10:138-145(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
MEDLINE=90097821; PubMed=2294398;
St Jacques B., Han T.-H., Macmurr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                  EMBL; M32010; AAA37767.1;
                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE; PS00633; BROMODOMAIN_1; PROSITE; PS50014; BROMODOMAIN_2;
                                                                                                                                                                                                                                                                                                                     region
                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-129/SVJ
                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=10090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HKE4 OR H2-KE4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 HGHEQQHGLGHGHKFKLDDDLEH
                                                                                                                                                                                                                     SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HGHGHGHGHGHGYGGSSSLKH
  AF100956; AAC69903.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity 47.1
11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          51
495
945
330
451
750
790
816
874
1731
1939
1022
2038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      909 G -
1022 H -
A; 205332 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             567
1106
350
471
770
810
810
830
830
1751
1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T.-H., Macmurray A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bromodomain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 65;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BROMODOMAIN
BROMODOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22.20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    * A.
* RKPYY.
849E0706D50A0098 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Transmembrane; Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              476 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Shin H.-S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                            .
.
                                                                                                                                                                                                                                                                                                                                       class
                                                                                                                                                       EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                            Mix L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                           collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOUTH FILE STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATES OF STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CSUP_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
        RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Barandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Barandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Barandon R.C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Barlew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.D., Bhandari D., Bottlier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Borttier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Borttier S.M.,
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davles P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davles P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davles P.,
RA de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Horstin D. Huston K.A Howland T. J. Weis M.-,
Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CSUP_DROME STANDARD; PRT; 4
09V3A4;
01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence up
01-OCT-2000 (Rel. 40, Last annotation
CATECHOLAMINES UP PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=99403013; PubMed=10471719; Stathakis D.G., Burton D.Y., McIvo Wright T.R., O'Donnell J.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata;
Pterygota; Neoptera; Endopterygota; Diptera
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "The catecholamines up (Catsup) protein of Drosophila melanogaster functions as a negative regulator of tyrosine hydroxylase activity."; Genetics 153:361-382(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATSUP OR CG10449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGHEQQHG-----LGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MGI:95909;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HAHSHDHGHSREELHHGHSHGHSHDSLHHGGH 113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  l Similarity
13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      146
177
222
393
417
27
27
252
337
403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        H2-ke4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50656 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            38.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 63.5; I
Pred. No. 0.2;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           McIvor W.E., Krishnakumar S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED (GLCNAC. . .) (POTENTIAL).
V -> L (IN REF. 1).
ACALITEGRAVDSDVASGAGPGWVLDFTAGGFIYVATVSVL
PELLREASPLQSLLEVLGLLGGVAMMVLIAHLE -> RVPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HIS-RICH.
HIS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPREGQWTVTWQVVQVLAGSCHSLQADLST (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48214438BE44919B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Diptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ⋛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hexapoda; Insecta;
a; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
```

```
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Klang Y., Liai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., McSherfi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Syirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Yeng X.H., Zhong F.N., Zhong M., Zhou X., Zhu X., Smith H.O.,
RT "The genome sequence of Drosophila melanogaster.";
CC -:- FUNCTION: Narammurer
                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
KE4L_CAEEL
     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RRAPARRAPA RRAPARRAPA RRAPA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                   01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                   Q9XTQ7;
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM CARBOHYD
                                                                    [1]
SEQUENCE FROM N.A.
PRISTOL N2;
                                                                                                                                                                                                                                                                       HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                           Submitted
                                                                                                                                                                       Eukaryota; Metazoa; Nemata
Rhabditidae; Peloderinae;
                                                                                                                                                                                                                    Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                 KE4L_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   between the Swiss Institute of Bioinformatics Institute.
                                                  Lennard N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fransmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FlyBase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . FUNCTION: NEGATIVELY REGULATES TYROSINE HYDROXYLASE ACTIVITY. SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE). SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 HGHEQQHGLGHGHKFK-LDDDLEHQGGH 27
nitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SWISS-PROT entry is copyright. It is produced through a collab
een the Swiss Institute of Bioinformatics and the EMBL outst
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        НDHDHDHGHDHGHHHHGHDHDHDHGH 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF216584; AAF37226.1; -. AE003661; AAF53744.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B.E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FBgn0002022;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kalush F., r
                                                                                                                                                                                                                                                                       19
135
167
222
371
395
316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
A
                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39
155
187
242
391
415
316
                                                                                                                                                                       Nematoda; Chromadorea; Rhabditida; Rhabditoidea; rinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               37.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               48658 MW;
                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation update)
PROTEIN H13N06.5 IN CHROMOSOME
                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Karpen G.H., Ke Z., Kennison J.A., D., Kraft C., Kravitz S., Kulp D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Catsup.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 62.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-LINKED (GLCNAC. . .) (F
F7111A254C07AB4C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
.26;
                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a collaboration
MBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ۲,
```

```
RESULT 11
S109_RABIT
ID S109_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                    P50117;
01-OCT-1996 (
15-JUL-1999 (
01-OCT-2000 (
                       MORI S., GOTO K., GOTO F., MUTAKAMI K., Ohkawara S., Yoshir "Dynamic changes in mRNA expression of neutrophils during to facute inflammation in rabbits.";
Int. Immunol. 6:149-156(1994).
-!- SIMILARITY: BELONGS TO THE S-100 FAMILY.
-!- SIMILARITY: CONTAINS 2 EF-HAND CALCIUM-BINDING DOMAINS.
                                                                                                                                                                                                                                                                                                                                       15-JUL-1999 (Rel. 38, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
CALGRANULIN B (MIGRATION INHIBITORY FACTOR-RELATED PROTEIN 14)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
                                                                                               SEQUENCE OF 45-82 FROM N.A. STRAIN-NEW ZEALAND WHITE; MEDLINE=94198229; PubMed=8148323;
                                                                                                                                                 "Rabbit polymorphonuclear neutrophils form 35S-labeled S-sulfo-calgranulin C when incubated with inorganic [35S]sulfate.";
J. Biol. Chem. 271:19802-19809(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM TRANSMEM
 This SWISS-PROT entry
                                                                                                                                                                                                 MEDLINE=96355278; PubMed=8702688;
Yang Z., de Veer M.J., Gardiner E.E.,
                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=NEW ZEALANI
                                                                                                                                                                                                                                                                           Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                 S100A9 OR MRP-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                       Underwood J.R., Robinson H.C.;
                                                                                                                                                                                                                                                     NCBI_TaxID=9986;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WormPep;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                              (MRP-14)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 HGHEQQHGLGHGHK-FKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                               HGHAHDHGHAHDHHGHSHDEEEDHHHGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Z99942; CAB17070.1;
ep; H13N06.5; CE1881
                                                                                                                                                                                                                                                                                                                            (FRAGMENT).
                                                                                                                                                                                                                          ZEALAND WHITE; TISSUE=Neutrophils;
                                                                                                                                                                                                                                                                                                                                                    (Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    429
463
92
7
237
379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein;
27 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A,
                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                     34,
38,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             69
234
267
267
317
406
449
483
182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CE18815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            55500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           36.2%;
39.3%;
is copyright.
                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transmembrane; Glycoprotein
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HIS-RICH.

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...

N-LINKED (GLCNAC...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL. POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60.5;
No. 0.
 Ħ
                                                                                                                                                                                                  Devenish R.J.,
                                                                         , Ohkawara S., Yoshinaga M.;
neutrophils during the cour;
 is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB
,.55;
                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                    Handley C.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      restrictions on
tent is in no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       collaboration
                                                                         course
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1;
```

European Bioinformatics Institute.

Swiss Institute of Bioinformatics

There are no restrictions

and the

EMBL outstation

8

```
RESULT 1:
KE4_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local S
Matches 9
Tubby B.;
Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases.
-!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE)
-!- TISSUE SPECIFICITY: MAJOR EXPRESSION IN PLACENTA, LUNG, KI'
AND PANCREAS.
                                                                                                                                                                                                     Genomics [2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REPEAT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                        KE4_HUMAN STANDARD;
Q92504; Q9UIQO;
Q1-QCT-2000 (Rel. 40, Created)
Q1-QCT-2000 (Rel. 40, Last seq
Q1-QCT-2000 (Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA_BIND
DOMAIN
                                                                                                                                                                    [2]
SEQUENCE FROM N.A.
Lana I.,
                                                                                                                                                                                                                            Chen L., Ikemura T., Abe K., Kimura M., Inoko H.; "cDNA cloning of the human homologues of the mouse at the centromeric end of the human MHC region.";
                                                                                                                                                                                                                                                                       Ando
                                                                                                                    Submitted
                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Calcium-binding; Repeat.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                             Encio I.;
                                                                                                                                                                                                                                                                                    TISSUE=Kidney;
MEDLINE=97001166;
                                                                                                                                                                                                                                                                                                                                                                                                            HISTIDINE-RICH MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002395; -.
Pfam; PF01023; S_100; 1.
Pfam; PF00036; efhand; 1
                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; D17404; BAA04227.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001751; -.
InterPro; IPR002048; -.
                                                                                         EQUENCE FROM
                                                                                                                                             Molecular cloning
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 HGHEQQHGLGHGH
                                                                                                                                                                                                                                                                      Α.,
                                                                                                                                                                                                                                                                                                                                                                                               OR RING5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHGHSHGHGHGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF091849; AAC61771.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PR00334; KININOGEN.
3; PS00018; EF_HAND; 1.
5; PS00303; S100_CABP; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
9; Conserv
                                                                                                                                 region
                                                                                                                                                                                                                 35:600-602(1996)
                                                                                                                                                                                                                                                                    Kikuti Y.Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   non-profit institutions as long as its content
                                                                                                                   (DEC-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111
118 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53
103
                                                                                                                                                                                                                                                                                    PubMed=8812499;
                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13
                                                                                                                                                                                                                                                                                                                                                     Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             110
118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22
64
118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13292
                                                                                                                                                                        Corella
                                                                                                                   ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       35
69
                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence up Last annotation NE PROTEIN KE4.
                                                                                                                                                                                                                                                                    Shigenari A., Kawata H.,
                                                                                                                                             characterization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . . .
2 ω
                                                                                                                   the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                                                   EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 59; DB
Pred. No. 0.18
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SITE I (L
SITE II (
2 X 8 AA
G-H-S-H.
                                                                                                                                                                       Α.,
                                                                                                                                                                                                                                                                                                                                                       Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7496118E21AD5C41
                                                                                                                                                                        de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   I (LOW AFFINITY) (POTENTIAL).
II (HIGH AFFINITY) (POTENTIAL
8 AA TANDEM REPEATS OF G-H-G-H
                                                                                                                                                                       Miguel
                                                                                                                                                                                                                                                                                                                                                                                                                                      update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                469
                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1
0.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
                                                                                                                                           the human KE4
                                                                                                                                                                       С.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                   databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4;
                                                                                                                                                                       Migliaccio
                                                                                                                                                                                                                                                                      Okamoto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                            Ke4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
OF G-H-G-H-
                                                                                                                                                                                                                                            and
                                                                                                                                                                                                                                                                      Z.
                                                                                                                                             gene
                                                                                                                                                                                                                                            Ke6
                                                                                                                                                                                                                                                                      Shiina T.
                                 KIDNEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                             and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'n
                                                                                                                                                                                                                                           genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

δÃ

В

```
HYPB_BRAJA
                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                  HYPB_BRAJA
Q45257;
Q1-NOV-1997
Q1-NOV-1997
Q1-NOV-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transmembrane;
TRANSMEM 138
TRANSMEM 169
TRANSMEM 214
TRANSMEM 214
TRANSMEM 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
CONFLICT
CONFLICT
CONFLICT
                                                                                          "Nucleotide sequences of two hydrogenase-related genes (hypA and hypB) from Bradyrhizobium japonicum, one of which (hypB) encode extremely histidine-rich region and guanine nucleotide-binding domains.";
                                                       Biochim. Biophys.
-!- FUNCTION: MAY
ENZYME. BINDS
                                                                                                                                                                                             Bacteria; Proteobacteria; alpha subdivision; Bradyrhizobium group; Bradyrhizobium. NCBI_TaxID=375;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MIM;
This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Exthe European Bioinformatics Institute. There are no restitute.
                                                                                                                                                             SEQUENCE FROM N. STRAIN-USDA 110;
                                                                                                                                                                                                                                 Bradyrhizobium japonicum.
                                                                                                                                                                                                                                                        HYDROGENASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; D82060; BAA11528.1; -. EMBL; AF117221; AAD12305.1; EMBL; AL031228; CAA20238.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                       Fu C.,
                                                                                                                                                  MEDLINE=94137733;
                                                                                                                                                                                                                                              HYPB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it
                                                                                                                                                                                                                                                                                                                                                                         73
                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                             1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                             SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601416;
                                                                                                                                                                                                                                                                                                                                                                         HGHTHDHDHGHSH----EDLHHGHSH
                                                                                                                                      Maier R.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              469
                                                                                                                                                                                                                                                                   (Rel.
(Rel.
(Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
138
169
214
381
417
                                                                                                                                                                                                                                                        EXPRESSION/FORMATION PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G
                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lycoprotein.
                                            ACTA 1184:135-138(1994).

WORK IN THE MOBILIZATION OF N.
9 NICKEL IONS PER MOLECULE.

ELONGS TO THE HYPB/HUPM FAMILY
                                                                                                                                                                                                                                                                  35, Created)35, Last sequence update)38, Last annotation updat
                                                                                                                                                  PubMed=8305450;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          158
189
234
401
436
114
263
330
330
376
                                                                                                                                                                                                                                                                                                                                                                                                                              35.0%;
40.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WW
                                                                                                                                                                                                                                                                                                                                                                                                                    1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-LINKED (GLCNAC.
A -> G (IN REF. 1 )
E -> G (IN REF. 1 )
S -> T (IN REF. 1 )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HIS-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                              Score 58.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CALLTEGGAVGSEIAGGAGPGWVLPFTAGGFIYVATVSVLP
ELLREASPLQSLLEVLGLLGGVIMMVLIAHLE -> VPFSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEEQWTVKLQVVQVLAGSCHLLQVALST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6504A1EF5AA6A5B9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                         94
                                                                                                                                                                                                                                                                                                                302
                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                . 93;
                                                                                                                                                                                                                                                                                                                A
                                                                                                                                                                                                                                                                                                                                                                                                                                           DВ
                                                                   OF NICKEL
                                                                                                                                                                                                                     Rhizobiaceae group;
                                                                                                                                                                                                                                                                                                                                                                                                                    10;
                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 AND 2).
1 AND 2).
1 AND 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AND
                                                                                                               genes (hypA and
h (hypB) encodes
                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                    INTO HYDROGENASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (IN REF. 1
              a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                    5
         outstation
                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                  an
                                                                                                                                                                                                                                                                                                                                                                                                                    ۲
```

as its content Usage by an

and is

for in

commercial no

way

```
Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SO DR CCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HYPB_RHOCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-AUG-1992
01-AUG-1992
01-NOV-1997
HYDROGENASE 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYPB_RHOCA
P26410;
                                                     PIR; D38532; D38532.
PIR; S21903; S21903.
                                                                               EMBL; X61007; CAA43326.1; -. EMBL; M55089; AAA72926.1; -.
                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                            the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                      Colbeau A., Richaud P., Toussaint B., Caballero F.J., Elster C., Delphin C., Smith R.L., Chabert J., Vignais P.M.; Polyanization of the genes necessary for hydrogenase expression Rhodobacter capsulatus. Sequence analysis and identification of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long a modified and this statement is not removed. entities requires a license agreement (See lor send an email to license@isb-sib.ch).
             Nickel.
                        Pfam; PF01495; HypB_UreG;
                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                  capsulatus.";
                                                                                                                                                                                                                                                                                                         MEDLINE-91177833;
                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                         Rhodobacter capsulatus. Sequence hyp regulatory mutants.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                         "Clustering of genes necessary for hydrogen oxidation in Rhodobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=1061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rhodobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rhodobacter capsulatus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                        InterPro;
                                                                                                                                                                                                                                                                                             Xu H.W., Wall J.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=93268090; PubMed=8497190;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nickel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; L24513; AAA17763.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16 НАНДИНИНДИБИДИБИНИННИН 42
                                                                                                                                                                                                                          Bacteriol. 173:2401-2405(1991).
- FUNCTION: COULD BE INVOLVED IN NICKEL BINDIN
- SIMILARITY: BELONGS TO THE HYPB/HUPM FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OR HUPM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PF01495; HypB_UreG;
                                                                                                                                                                                   the Swiss Institute of Bioinformatics and the
                                        IPR002894;
 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             302 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel. 23, Created)
(Rel. 23, Last sequence update)
(Rel. 35, Last annotation update)
EXPRESSION/FORMATION PROTEIN HYPB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16
                                                                                                                                                                                                                             173:2401-2405(1991).
THE THYOLVED IN NICKEL BINDING AND
 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                            8:15-29(1993).
                                                                                                                                                                                                                                                                                                        PubMed=2007559;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           54 F
32737 MW;
 35342 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          34.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Rhodopseudomonas capsulata)
ia; alpha subdivision; Rhodob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 57; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HIS-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
B7276C3E1AA0FD02 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           92A4EFE58E013D01 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              335
                                                                                                                                              There are no restrictions on it ong as its content is in respectively.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .93;
                                                                                                                                            Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rhodobacter group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                        ACCUMULATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                      in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                          way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
```

Job time: 969 sec

July

6

2001, 09:26:38

```
RESULT 15
ZNIA_HAEL
ZNIA_H AC
ZNIA_H AC
DI 101-NOV
DI 01-NOV
DI 15-DEC
DE HIGH-A
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZNUA C
GN ZN
                                               ρy
  Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                      Query Match
Best Local
                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1995 (Rel. 32
01-NOV-1995 (Rel. 32
15-DEC-1998 (Rel. 37
HIGH-AFFINITY ZINC U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZNUA_HAEIN
P44526;
01-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F. Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M. McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weldman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D., Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C., Fitchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                       Zinc; Transport.
                                                                                                                                                                                                                                                                                                                         InterPro; IPR001987; -
Pfam; PF01297; Lipoprotein_4; 1.
                                                                                                                                                                                                                                                                                                                                                                               EMBL; U32698; AAC21794.1; TIGR; HI0119; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 269:496-512(1995).
-!- FUNCTION: INVOLVED IN THE HIGH-AFFINITY ZINC SYSTEM (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SYSTEM (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE FIMA/PSAA/SSAB/SCAA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Venter J.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-RD / KW20 ,
MEDLINE-95350630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZNUA OR HI0119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Whole-genome random sequencing and influenzae Rd.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     64
                              1 HGHEQQHGLGHGHKFKLDDDLEHQGGH
HDHDHKHEHKHDHKHDHDHDHKHEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HAHSHSHAAGHG--AEADSDHPHAHGH 88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                          l Similarity
10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N.A.
                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    / ATCC
                                                                                                                                                                                                                                              163 · F
; 37659 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              32, Created)
32, Last sequence update)
37, Last annotation update)
C UPTAKE SYSTEM PROTEIN ZNUA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  / ATCC 51907;
PubMed=7542800;
                                                                                                                                   34.18;
37.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   34.1%; Score 57; 40.7%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gamma subdivision; Pasteurellaceae;
                                                                                                          4;
                                                                                                                                   Score 57;
Pred. No.
                                                                                                                                                                                                                                     HÍS-RICH.
; 3DBB45AB8F06FFCB CRC64;
                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
  151
                                                  27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   assembly of Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              337
                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Clayton R.A., Kirkness E.F., Dougherty B.A., Merrick J.M., elds C.A., Gocayne J.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA
                                                                                                                                                               ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1;
                                                                                                          13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13;
                                                                                                                                                            Length 337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 335;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UPTAKE TRANSPORT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>ب</u>
                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;;
```

Fri

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
    70.5
70.5
70.5
68.5
67.5
65.5
65.5
62.5
62.5
62.5
61.5
61.5
                                                                                                                                                                                                                                                                                                                                                                                                98.5
71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPTREMBL_16:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungd:*
4: sp_human:*
5: sp_invertebrate
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_unclassific
13: sp_vertebrate
14: sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match
    56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56.00

56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BLOSUM62
Gapop 10.0 , Gapext 0:5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 July 6, 2001, 09:25:54; Search time 118.42 Seconds (without alignments) 31.283 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-437-912-5
167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HGHEQQHGLGHGHKFKLDDDLEHQGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_organelle:*
sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_invertebrate: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
    126
693
208
218
686
686
686
378
313
3198
198
199
776
1064
1064
1084
199
199
199
199
199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                             009016
090700
096711
09073P9
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
09078N0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425026
Q91yb2 arabidopsis
Q9nes7 caenorhabdi
Q81036 arabidopsis
Q27920 bradysia hy
                                                                                      Q9v5n1 drosophila
Q24455 drosophila
O86731 streptomyce
                                                                                                                                                                                                         Q9nnv9 plasmodium
Q9w3l3 drosophila
                                                                                                                                                                                                                                                       Q9jkn1 mus musculu
Q9gtn0 drosophila
Q9vwx5 drosophila
                                                                                                                                                                                                                                                                                                                        Q9gtn1 drosophila
Q9v3p9 drosophila
Q9vws0 drosophila
                                                                                                                                                                                                                                                                                                                                                                                           009016 rattus norv
09vu00 drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Description
                                                                                                                                                              Q9zrc7 alnus gluti
O81050 arabidopsis
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20
55	55.5	Ġ	55.5	55.5	55.5	57	57	57.5	58	58	58	58	58	58	58.5	59	59	59	59	59	59	59	59	59	59.5
32.9	33.2	33.2	33.2	33.2	33.2	34.1	34.1	34.4	34.7	34.7	34.7	34.7	34.7	34.7	35.0	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.6
189	366	255	250	242	102	554	213	168	549	495	494	398	378	119	506	989	605	511	457	457	348	245	110	79	201
Ν	տ	11	11	2	σ	u	N	5	5	G	Ŋ	10	10	ഗ	υ	տ	σ	U	ഗ	ഗ	ഗ	10	10	10	N
Q9PJ12	Q9VGS1	Q61 <b>57</b> 0	061571	Q9KP27	Q94189	Q9W4C1	д9хвлв	Q9VWM5	Q18009	Q9VEX1	Q9GRW9	Q9ZT63	Q9LXS1	Q9VYP3	Q9N3Y1	Q9W2S4	077280	Q9VXG3	Q9W4I6	Q26227	Q9W2X1	Q9XEL3	064396	Q9M435	Q9KNX6
Q9pj12 campylobact	Q9vgs1 drosophila	Q61570 mus musculu	Q61571 mus musculu	Q9kp27 vibrio chol	Q94189 caenorhabdi		Q9x8j8 streptomyce	Q9vwm5 drosophila	_		Q9grw9 drosophila	Q9zt63 arabidopsis	-	Q9vyp3 drosophila	Q9n3y1 caenorhabdi	. Q9w2s4 drosophila		Q9vxg3 drosophila	Q9w4i6 drosophila	Q26227 rhynchoscia	ď			Q9m435 quercus rob	Q9knx6 vibrio chol

## ALIGNMENTS

1-JUL-1997 (TrEMBLrel. 04, Created) 1-JUL-1997 (TrEMBLrel. 04, Last sequ. 1-OCT-2000 (TrEMBLrel. 15, Last anno- KIKINOGEN (FRAMENT)).  NGK.  attus norvegicus (Rat).  ukaryota; Metazoa; Chordata; Craniat.  ammalia; Eutheria; Rodentia; Sciurog.  CBL_TaxID-10116;  1]  EQUENCE FROM N.A.  TRAIN-DONKYU;  TRAIN-DONKYU;  EDLINE-97468288; PubMed-9321484;  arris E.L., Grigor M.R., Innes B.A.,  acob H.J.;  Strain-Specific deletions in exon 10  ininogen genes allow mapping of both  amm. Genome 8:791-792(1997).  MBL; AF0035623; AAC09070.1;  nterPro; IPR002395;  RINTS; PR00334; KININOGEN.  ON. TER 126 AA; 14092 MW; 9CCDF8  EQUENCE 126 AA; 14092 MW; 9CCDF8  LOCAL Similarity 50.0%; Score 98  Local Similarity 50.0%; Pred. No  hes 18; Conservative 3; Mismai  1 HGHEQOHGLGHGHKFKLDD	RESULT 1 009016 ID 009016	0090	3 2			בן ד <u>י</u>	N E	So	8	٦ i	2 8	: 5	RN	RP	RC	RX	RA	3 5	7 ;	RI.	DR	DR	DR	FT	ΗŢ	SQ	Que Bes	QУ	Db	RESULT	ID
LITEL 04, CILTELL 04, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 15, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL 16, LE LITEL		100	-TIII - 1997	01 - 11111997	01-008-3000	OT-OCT-7000	KNGK	Rattus norv	Eukaryota;	Mammalia: F	NCBI TaxID=	INCUT_TOWARD	[1]	SEQUENCE FR	STRAIN-DONR	MEDLINE=974	Harris E.L.	# C+ C 11.0.,	kiningen g	Mamm. Genom	EMBL; AF003	InterPro; I	PRINTS; PRO		NON_TER		Query Match Best Local Sim Matches 18;				Q9VU00
H 1 TO	PRELIMINARY;	PRELIMINARY;					(FRAGEENI).	edicus (Rat).	Metazoa; Chorda	ntheria: Rodent	2	+0++0,		OM N.A.	YU;	68288; PubMed=!	, Grigor M.R.,	aifin dolotion	enec allow mann	e 8:791-792(19	623; AAC09070.]	PR002395;	0334; KININOGE	1 1 .			vai	HGLGHGHKFKLDD-	HGLGHGHQLKLDDLF		PRELIMINARY;
peence update) station updat a; Vertebrat nathi; Murid nathi; Murid of rat K-Ki genes to ra 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C 1751DA49C88 C	PRT;	PRT;		1.26.1		-										9321484;	Innes B.A.,		sing of both								Score Pred. 3; Mi	DLEH	(QQREDGYDHRH		
RC t lae		126 AA.		once indate)		tation update)			a; Vertebrata;	nathi. Muridae	Hachit; Murituae						Harrap S.B.,									751DA49C88 CRC64;	DB 11; e-06; 6;	QGGH 27	PVGH 73		
tation update) tation update)  a; Vertebrata; Euteleostomi; nathi; Muridae; Murinae; Rattus  Harrap S.B., Koike G.,  of rat K-kininogen and T1- genes to rat chromosome 11.";  751DA49C88 CRC64;  .2.4e-06; .2.4e-06; .2.4e-06; .1ndels 9; Gaps  OGGH 27       PVGH 73										· Murinae: Ra	; murrhae; Ka						Koike G.,		chromosome 11							64;	126; 9;				

```
Q
밁
                                                                                                                                                                                                                                             RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibeywam C.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibeywam C.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O.,
RA Zheng K.H., Zhong W., Rubin G.M., Venter J.C.,
"The genome sequence of Drosophila melanogaster.";
CC -!- SUBCELLUAR LOCATION: NUCLEAR (BY STMILARTY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Addams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,

A Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,

Ra George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,

Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,

Barndon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,

MAN K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,

A Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,

Man K.H., Dayle C., Baxer B.G., Helt G., Nelson C.R., Miklos G.L.G.,

Man K.H., Dayle C., Baxer B.G., Helt G., Nelson C.R., Miklos G.L.G.,

Man K.H., Dayle C., Baxer B.G., Helt G., Nelson C.R., Miklos G.L.G.,

Man K.H., Doyle C., Baxer B.G., Helt G., Nelson C.R., Miklos G.L.G.,

Man K.H., Doyle C., Baxer B.G., Helt G., Nelson C.R., Miklos G.L.G.,

Ma Ballew R.M., Basu A., Baxerdale J., Bayraktaroglu L., Beasley E.M.,

Ma Beson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,

Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottler P.,

Ma Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I.,

Ma Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,

Ma Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,

Donson K.J. Ferrara C. Ferrara C., Batchan G., Parian G.,

Bartis R.J., Francalista C., Ferrara C., Batchan G., Dunn P.,

Man K.H., Baxer B.G., Baxer B.G., Baxer B., Dunkov B.C., Dunn P.,

Man K.H., Baxer B., Baxer B., Baxer B., Dunkov B.C., Dunn P.,

Man K.H., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B.,

Man K.H., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B.,

Man K.H., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B., Baxer B.,
                                                                                                                                    Query Match
Best Local
                                                                                                           Matches
                                                                                                                                                                                                                                          DNA-binding; H
SEQUENCE 693
                                                                                                                                                                                                                                                                                                                                                                         FlyBase; FBgn0015919; caup.
InterPro; IPR001356; -.
Pfam; PF00046; homeobox; 1.
                                                                                                                                                                                                                                                                                             SMART; SM00389; HOX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         -I- SIMILARITY: TO OTHER HOMEOBOX EMBL; AE003540; AAF49895.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAUP OR CG10605
                                                                                                                                                                                                                                                                                                                    PROSITE; PS00027; HOMEOBOX_1; PS50071; HOMEOBOX_2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000
656
                            1 HGHEQQHGLGHGHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: NUCLEAR
HGHGHGLGHGH----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROTEIN
                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ) (TrEMBLrel.) (TrEMBLrel.
                                                                                                        Conservative
                                                                                                                                                                                                                                     Homeobox; Nuclear protein.
93 AA; 73667 MW; FBEB1616493F7EC9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophilidae; Drosophila.
                                                                                                                               42.5%;
---GLGHGHGHM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation update)
                                                                                                        ببر
۰۰
                                                                                                                            Score 71;
Pred. No.
                                                                                                        Mismatches
677
                                                     28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (BY SIMILARITY).
                                                                                                                               DB 5
                                                                                                                                                        ์
ร:
                                                                                                                                                        Length 693;
                                                                                                                                                                                                                                          CRC64;
                                                                                                        Indels
                                                                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dunn P.,
                                                                                                     Gaps
                                                                                                        ۲,
```

```
RESULT
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
OPERING
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Bortis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., Cadieu B., Chandra I., Cadieu E., Cadieu E., Cadieu E., Cadieu E., Davies P., Dept D., Bolcher A., Deng Z., Mays A.D., Dew I., Dietz S.M., Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dun Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann Posler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K., Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J., Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-20196006; PubMed-10731132;
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
Abril J.F., Beasley E.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9V3P9;
Q9V3P9;
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9GTN1;
Q9GTN1;
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pterygota; Neoptera; Endopterygota; Dip
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda;
Pterygota; Neoptera; Endopterygota; Diptera; Brachyo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "The evolutionary analysis of 'orphans' from the Drosophila genome identifies incorrectly annotated and rapidly evolving genes."; Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AF264919; AAG10258.1; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila simulans (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAR-2001 (TrEMBLrel. 16, Created 01-MAR-2001 (TrEMBLrel. 16, Last se 101-MAR-2001 (TrEMBLrel. 16, Last and 101-MAR-2001 (TrEMBLrel. 16, Last and DS06238.4-LIKE PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG:DS06238.4 OR CG3474.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-NORTH CAROLINA 17;
Schmid K.J., Aquadro C.F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ephydroidea; Drosophilidae; Drosophila. NCBI_TaxID=7240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             172 HGHVHGHGHGSSSHSYSLKQDHGHGHGH 201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HGHEQQHGLGHG----HKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23011 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42.28;
46.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13,
13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ۲.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 70.5; DB Pred. No. 0.029;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E24B8C189BC0746D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
G.,
```

۲:

```
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., RA Liu X., Mattel B., McIntosh T.C., McDeod M.P., McPherson D., RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshefi A., RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L., RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., RA Nelson D.R., Peittman G.S., Pan S., Pollard J., Puri V., Reese M.G., RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H., Shue B.C., Siden-Kiamos I., Simpson M., Strong R., Smith T., RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E., Syirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X., Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zhang C., Zhao Q., Zhang C., J., Yang S., H., Wang X., Rha Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O., Rha Glibbs R.A., Myers E.W., Rubin G.M., Venter J.C.; Sthu X., Smith H.O., Rha Genome sequence of Drosophila melanogaster."; Science 287:2185-2195(2000).
Q9VWS0
ID Q0
AC Q0
DT 00
DT 00
DT 00
DT 00
                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Celniker S.E., Agbayani A., Arcaina T.T., Baxter E., Blazej R.G., Butenhoff C., Champe M., Chavez C., Chew M., Ciesiolka L., Doyle C.M. Farfan D.E., Galle R., George R.A., Harris N.L., Hoskins R.A., Houston K.A., Hummasti S.R., Karra K., Kearney L., Kim E., Lee B., Lewis S., Li P., Lomotan M.A., Mazda P., Moshrefi A.R., Moshrefi M., Nixon K., Pacleb J.M., Park S., Pfeiffer B., Poon L., Sequeira A., Sethi H., Snir E., Svirskas R.R., Wan K.H., Weinburg T., Zhang R., Sternan L.L., Rubin G.M.;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AE003643; AAF53397.1; -.
EMBL; AE00369; AAF4875.1; -.
                01-MAY-2000
01-MAR-2001
                                                         Q9VWS0;
01-MAY-2000
                                                                                                   OSMA60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster: the Genetics 153:179-219(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ashburner M., Misra S., Roote J., Lewis S.E., Blazej R., Davis T., Doyle C., Galle R., George R., Harris N., Hartzell G., Harvey D., Hong L., Houston K., Hoskins R., Johnson G., Martin C., Moshrefi A., Palazzolo M., Reese M.G., Spradling A., Tsang G., Wan K., Whitelaw K Celniker S., Rubin G.M.;
Celniker S., Rubin G.M.;
"An exploration of the sequence of a 2.9-Mb region of the genome of Drosophila melanogaster: the Adh region.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN-Y, AND CN BW SP;
                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR000618; -.
InterPro; IPR002395; -.
Pfam; PF00379; insect_cuticle;
PRINTS; PR00347; CUTICLE.
PRINTS; PR00334; KININGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                             Hypothetical protein.
SEQUENCE 218 AA; 24371 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-99403001; PubMed-10471707;
                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00233; CUTICLE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FlyBase; FBgn0028871; BG:DS06238.4.
                                                                                                                                                                                                  182
                                                                                                                                                                                                                                         1 HGH-----EQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                        Ç
                                                                                                                                                                                                  HGHGSSSHSYSLKQEHGHGHGHSHGQDHGFEHGHGY 217
                                                                                                                                                                                                                                                                                14;
    PROTEIN
                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AND CN BW SP;
                  (TrEMBLrel. (TrEMBLrel.
                                                         (TrEMBLrel.
                                                                                                   PRELIMINARY
                                                                                                                                                                                                                                                                                                 42.2%;
                  13,
13,
                                                                                                                                                                                                                                                                            ; Score 70.5; D; Pred. No. 0.03
3; Mismatches
                                                       Created)
                  Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                               8C920ECC351E3529 CRC64;
                                                                                                                                                                                                                                                                                              70.5;
No. 0.
                                                                                                   686
                                                                                                                                                                                                                                                                                                   DB 5;
.031;
                                                                                                 Ą
                                                                                                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                 Length 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Whitelaw K.,
                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C.M.,
```

```
밁
                                           Qy
                                                                                                                                                                                              RA Ballew R. M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Durbin K.J., Evangelista C.C., Ferrac C., Ferriera S., Fleischmann W.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Reinert K., Renington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun H.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Yein R.-F., Zaveri J.S., Dann M., Zhang G., Zhao Q., Zheng L.,
RA Gibbs R.A., Pacce of Drosophila melanogaster.";
RT Segence 287:2185-2195(2000).
DR EMBL, AE003509; AAF48868.l.; -.
DR EMBL, AE003509; AAF48868.l.; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Drosophila melanogaster (Fruit fly).
Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Etukaryota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                  PRINTS; PR00308; ANTIFREEZEI.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00639; THIOL_PROTEASE_HIS; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                         InterPro; IPR002395; -. Pfam; PF00628; PHD; 1.
                                                                                                                                                                                                                                                                                                                                             FlyBase; FBgn0030945; CG6632.
InterPro; IPR000104; .
InterPro; IPR000169; .
InterPro; IPR001965; .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
466
                                        1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
HGHGHGHGHGHGHGHHSSSGHGGGH 492
                                                                                                                                                                                                                     SM00249; PHD;
                                                                                                                                                                                              686 AA;
                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PubMed=10731132;
                                                                                                          41.9%;
48.1%;
                                                                                                                                                                                              70647 MW;
                                                                                      0;
                                                                                                            Pred.
                                                                                                                              Score 70;
                                                                                                                                                                                              17C56F19B5D2B901 CRC64;
                                                                                      Mismatches
                                                                                                            No.
                                                                                                                              DB 5; Length 686;
                                                                                        14;
                                                                                        Indels
                                                                                      0:
                                                                                      Gaps
                                                                                      0,
```

RESULT Q9JKN1

```
RESULT
Q9VWX5
                                                                                                                                                                                             Qy
   Barara
                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                  Q9GTN0
                                                                                                                                            Matches
                                                                                                                                                     Best
                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
Q9VWX5;
01-MAY-2000 (Tri
01-MAY-2000 (Tri
01-MAR-2001 (Tri
CG5936 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000
01-OCT-2000
01-MAR-2001
                                                 Q9VWX5
                                                                                                                                                                                                    "The evolutionary analysis of 'orphans' from the Drosophila identifies incorrectly annotated and rapidly evolving genes. Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AF264920; AAG10259.1; -.
                                                                                                                                                                                                                                                                                                                                              Q9GTNO;
01-MAR-2001 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                      DS06238.4-LIKE PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (FEB-2000) to the EMBL; AF233322; AAF43423.1; InterPro; IPR002524; -..
                                                                                                                                                                                                                                                         Schmid
                                                                                                                                                                                                                                                                                                                            Drosophila yakuba (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                         Q9GTN0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Cloning of new mammalian zinc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zhu W., Mager S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse)
                                                                                                   179
                                                                                                                                                                                                                                                                                                                                                                                                                                           163
                                                                                                                                                     Local Similarity
                                                                                                                     1 HGHEQQHGLGHG---HKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 GHEQQHGLGHGHKFKL-DDDLEHQGGH
                                                                                                  HGHGHAHGHGSSSHSYSLKQEHGHGHGH
                                                                                                                                                                                                                                                                                                                                                                                                                                        GHGHSHGSGHGHSHSLFNGALDHSHGH 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSPORTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF01545; Cation_efflux;
NCE 378 AA; 41790 MW;
                                                                                                                                            13;
                                                                                                                                                                                                                                                        K.J., Aquadro C.F.;
                                                                                                                                                                                              213 AA;
                   (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORTER LIKE 2.
                                                                                                                                           Conservative
           (TrEMBLrel.
                                                 PRELIMINARY
                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chordata;
Rodentia;
                                                                                                                                                                                             23731 MW;
                                                                                                                                                    40.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41.08;
48.18;
         13,
                                                                                                                                                                                                                                                                                                                                             16, Created)
16, Last sequence update)
16, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15,
16,
        Created)
Last sequence update)
Last annotation update)
                                                                                                                                          2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 68.5;
Pred. No. 0.
                                                                                                                                          Pred. No. 0.0
2; Mismatches
                                                                                                                                                              Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1.
B98AC19C9A045006 CRC64;
                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                            315B8590D97B86C9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    transporter like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                             27
                                                                                                                                                    . 67.5;
No. 0.
                                                                                                  208
                                                                                                                      27
                                                 385
                                                                                                                                                                                                                                                                                                                                                                                        213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378
                                                                                                                                                    DB
,079;
                                                                                                                                                                                                                                                                                                                                                                                       A
                                                AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 11;
                                                                                                                                                             5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                          12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           databases
                                                                                                                                                                                            CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    genes.";
                                                                                                                                                            Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                         Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378;
                                                                                                                                                                                                                                      genome
                                                                                                                                          Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mus
                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                          <u>ب.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ۳
```

RESULT Q9NNV9

ø

Q9NNV9; 01-OCT-2000

PRELIMINARY; (TremBLrel. 15,

Created)

198

₽

Q9NNV9

```
망
                                       Qy
                                                                                                                                                                                                      Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Dbegwam C.,
Washin D., Houston K.A., Howland T.J., Wei M.-H., Dbegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Murphy L., Muzny D.M., Nelson D.L.,
RA Reinert K., Remington K., Nixon K., Nuxon K., Nuxon K., Nuxon K., Pacleb J.M.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
Shue B.C., Siden Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Milliams S.M., Moodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
RA Aleng X.H., Zhong F.N., Zhong M., Zhang G., Zhao Q., Zheng L.,
RA Aleng X.H., Zhong F.N., Zhong M., Zhou X., Zhu X., Smith H.O.,
"The genome sequence of Drosophila melanogaster.";

Science 287:2185-2195(2000).
                                                                                                         Query Match
Best Local S
                                                                                        Matches
                                                                                                                                                                                        Pfam; pF00001; 7tm_1; 2.

Pfam; pF00001; 7tm_1; 2.

PROSITE; pS00237; G_PROTEIN_RECEPTOR; 1.

G-protein coupled receptor; Glycoprotein; Transm SEQUENCE 385 AA; 43204 MW; ECAC1B1AA9AFFABE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M., Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann Fosler C., Gabrielian A.E., Garg N.S., Gelbart W.M., Glasser K., Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FlyBase; FBgn0030901; CG5936.
InterPro; IPR000276; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                     -!- SUBCELLULAR LOCATION: INTEGRAL
-!- SIMILARITY: BELONGS TO FAMILY
EMBL; AE003508; AAF48812.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-BERKELEY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CG5936
  217
                                          HGHEQQHGLGHGHKFKLDDD
HGHGHGHAHGHGYLKDDD
                                                                                                              Similarity
                                                                                                                                                                                                                                                                                           IPR000276;
                                                                                      Conservative
                                                                                                         39.5%;
55.0%;
236
                                       20
                                                                                                                                                                                                                                                                                                                                                            INTEGRAL MEMBRANE PROTEIN (BY SIMILARITY).
) FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.
                                                                                                           Score 66;
Pred. No.
                                                                                      Mismatches
                                                                                                              0
                                                                                                  DB .
                                                                                                                                                                                                  Transmembrane AFFABE CRC64;
                                                                                                                                5.
                                                                                        8
                                                                                                                                Length 385;
                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q., Zheng L., X., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Reese M.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Chandra I.,
                                                                                    0
                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Κ.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              €.
                                                                                    0
```

```
Q9W31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Brandon R.C., Baxer E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Borico R.Y., Benos P.V., Berman B.P., Bhandari D., Baldwin D.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borico D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borico D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Dowles P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Dowles P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Dowles P.,
RA Gepablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J.,
RA Hostin D., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Lei Y., Levitsky A.A., Li J., Li Z., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., King Y., Lin X.,
RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local S
Matches 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-MAR-2001 (TrEMBLrel. 13, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update
FEMALE STERILE (1) HOMOEOTIC PROTEIN.
FS(1)H OR CG2252.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Spielmann T., Beck H.;
"Analysis of stage specific transcription in Pl
reveals a set of genes exclusively transcribed
parasites.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Diroscheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002395; -. PRINTS; PR00334; KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9W3L3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN-3D7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AJ290925; CAB92934.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmodium falciparum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=7227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HGHEQQHGLGHGHKFKLDDDLEH-----QGGHV 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HAHELDHGHDHGHDHGHDHGHDHGHGHGGHV 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alveolata; Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                198 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23.5 KDA PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              198
23470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   39.2%;

    Last sequence update)
    Last annotation updat

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 65.5; I
Pred. No. 0.14
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4DCD4D7EE2E4BF72 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ĀΑ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              in ring stage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 198;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
```

```
RESULT
Q9ZRC7
ID Q9
 ρ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00439; bromcuomari, ...
PRINTS; PR00308; ANTIFREEZEI.
PRINTS; PR00503; BROMODOMAIN.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00633; BROMODOMAIN_2; 2
PROSITE; PS50014; BROMODOMAIN_2; 2
PROSITE; PS00583; PFKB_KINASES_1; 1
PROSITE; PS00583; PFKB_KINASES_1; 1
PROSITE; PS00583; PFKB_KINASES_1; 1
                                                                                                                                                                                                                                                                                                                                                                   Q9ZRC7
Q9ZRC7;
Q1-MAY-1999
01-MAY-1999
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
Shue B.C., Siden Klamos I., Simpson M., Skupski M.P., Smith T.,
Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,
Glubbs R.A., Myers E.W., Rubin G.M., Venter J.C.;
"The genome sequence of Drosophila melanogaster.";
Science 287:2185-2195(2000).
EMBL; AE003442; AAF46312.2; -.
FlyBase; FBgn000465; fs(1)h.
                                                                                                                                    TISSUE-ROOT NODULES;
Dobrita S.V., Mullin B.C.;
Dobrita S.V., Mullin B.C.;
In vitro expression of actinorhizal nodulin AgNOD-GHRP and demonstration of its toxicity ot Escherichia coli.";
(In) Stacey G., Mullin B.C., Gresshoff P.M. (eds.);
the Biology of Plant-Microbe Interactions:
Proceedings of the 8th International Symposium on Molecular
                         "Isolation of a non
protein from Alnus
Thesis (1993), The
SEQUENCE FROM
                                                                                                                                                                                                                                                                                              Eukaryota; Viridiplantae; Embr. Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                                                                                                                                                          AGNT84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson N., Nusskern D.R., Pacleb J.M. Nelson K.A., Nixon K., Kuisskern D.R., Pacleb J.M. Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Rees Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen
                                                                     Twigg P.G.;
                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                            Alnus glutinosa (Alder).
                                                                                                                                                                                                                                                                                                                                                      ACTINORIZAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Merkulov
                                                                                                 SEQUENCE FROM N.A.
                                                                                                                             Plant-Microbe
                                                                                                                                                                                                                                                                    NCBI_TaxID=3517;
                                                                                                                                                                                                                                                                                    Fagales; Betulaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                809
                                                                                                                                                                                                                                                                                                                                                                                                                                                         11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HGHGHGHGHGHGYGGSSSLKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGHEQQHGLGHGHKFKLDDDLEH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IPR002395;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IPR001487; -. IPR002173; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR000104; -.
                                                                                  NODULES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                        NODULIN
                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel. 10, (TrEMBLrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                                 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Milshina N.V.,
                                            a nodule-specific cDNA encoding Alnus glutinosa.";
                                                                                                                             Interactions,
                          glutinosa.
University
                                                                                                                                                                                                                                                                                                                                                        AGNOD-GHRP.
                                                                                                                                                                                                                                                                                     Alnus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      38.98;
                                                                                                                                                                                                                                                                                                Embryophyta; Trache
lons; core eudicots;
                                                                                                                          pp.1-1,
                                                                                                                                                                                                                                                                                                                                                                   Last sequence up
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mobarry C., Morris J.,
                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23
                           of
                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22
                           Tennessee,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1D80AA7BB351F06B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      No.
                                                                                                                             Unknown Publisher
                                                                                                                                                                                                                                                                                                                                                                                                                             99
                                                                                                                                                                                                                                                                                              Tracheophyta; Spermatophyta; dicots; Rosidae; eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB
                                                                                                                                                                                                                                                                                                                                                                                                                             A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>ن</u>
                           Knoxville,
                                                                                                                                                                                                                                                                                                                                                                     update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10;
                                                    þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1937;
                                                    putative glycine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Moshrefi A.
                                                                                                                           (1996)
                           ŦN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Reese M.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                J.M.,
                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               D.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0;
```

Horowitz H., Berg C.A.;

```
RESULT
081050
ID 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC 088
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Вþ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1998 (TrEMB
01-NOV-1998 (TrEMB
01-JUN-2000 (TrEMB
T18E12.9 PROTEIN.
                                                                                                                                                                                                                                                                    Q9V5N1; Q9V5N2; Q24184;
01-MAY-2000 (TrEMBLrel.
01-MAY-2000 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                     Q9V5N1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pawlowski K., Twigg P.G., Dobritsa S.V., Guan C., Mullin B.C.; "A nodule-specific gene family from Alnus glutinosa encodes gliand histidine-rich proteins expressed in the early stages of actinorhizal nodule development."; Submitted (SEP-196) to the EMBL/GenBank/DDBJ databases. EMBL; U69156; AAD00171.1; -...
InterPro; IPR002395; -...
                                                                                                                       Drosophila melanogaster (Fruit fly).
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Musc
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                     PSQ PROTEIN.
PSQ OR CG2368.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-CV. COLUMBIA;
Rounsley S.D., Lin X., Kaul S., Shea T.P., Fujii C.Y., M
Shen M., Ronning C.M., Fraser C.M., Somerville C.R., Ven
"Arabidopsis thaliana chromosome II BAC T18E12 genomic s
Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AC005313; AAC34478.1: -
SEQUENCE 776 AA; 89775 MW; BE30603ACFADD14E CRC64;
                             TISSUE-OVARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Magnoliophyta; eudicotyledo
Brassicales; Brassicaceae;
                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             T18E12.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         081050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PR00334; KININOGEN. SEQUENCE 99 AA; 10567 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                       13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         سر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 HGHEQQHGLGHGHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HGHGGGHGGGHQIGHFSDSDDDIEEGIKHV 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HGHEQQHGLGH--GHKFKLDDDLEHQGGHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HGHRHVHGHGHGHVH - - GNGNEHGHGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
13; Conserv
                                                                                                                                                                                                                                                                  0 (TrEMBLrel.
0 (TrEMBLrel.
1 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NODULES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   idiplantae; Embryophyta; Tracheophyta; Spermatophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
                                                 (ISOFORM A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          38.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38.3%;
                                                                                                                                                                                                                                                                    024187;
13, Cre
13, Las
16, Las
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        08,
08,
14,
                                                                                                                                                                                                                                                                    Last sequence update)
                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 64; DB 10 Pred. No. 0.11; 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 64; DB Pred. No. 0.93
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2ACBE4D57C070E83 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27
                                                                                                                                                                                                                                                                                                                                                                        1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 10;
                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10; Length 99
                                                                                                                                                                                                                                                                    update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11;
                                                                                                                                                Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 776;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence.",
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ٧,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        glycine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1;
```

Ű

```
RA Addms N.D., Celniker S.E., Helt R.A., Evans C.A., Gocayne J.D.,
RA Addms N.D., Celniker S.E., Hilh R.A., Evans C.A., Golayne J.D.,
RA Addms N.D., Celniker S.E., Hilh R.A., Evans C.A., Golle R.F.,
RA Addms N.D., Celniker S.E., Richards S., Ashburner M., Henderson S.N.,
RA Goorge R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Brandon R.C., Rogers Y.H.C., Blazel R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Bayzaktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayzaktaroglu L., Beasley E.M.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Glabart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Glabart W.M., Glasser K.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Harris N.L., Harvey D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Mount S.M., Woy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Ments S.M., Woy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Sen H.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling S.M., Scholes E., Shang G., Zhao Q., Z
VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                             EMBL; U48358; AAC47153.1;
EMBL; U48402; AAC47154.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Horowitz H., Berg C.A.; "The Drosophila pipsqueak gene encodes protein required early in oogenesis."; Development 122:1859-1871(1996).
                                                        VARSPLIC
                                                                                             SMART; SM00225;
                                                                                                                                InterPro; IPR002197; -. Pfam; PF00651; BTB; 1.
                                                                                                                                                                                         FlyBase; FBgn0004399; psq.
                                                                                                                                                                                                          EMBL; AE003829; AAF58769.1; EMBL; AE003829; AAF58770.1;
                                                                          Alternative splicing.
                                                                                                                 PROSITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Development [3]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=OVARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Aberrant splicing and transcription termination caused by insertion into the intron of a Drosophila gene.";
                                                                                                                                                                     InterPro; IPR000210; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. (ISOFORMS A AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=96232300; PubMed=8674425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. (ISOFORMS A AND
                                                                                                                                                                                                                                                                                      ALTERNATIVE PRODUCTS: 3 ISOFORMS; A/1 (SHOWN HERE), PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                 PS50097;
 AA;
                                                                                             BTB; 1.
                 1020
                                                                                                                 BTB;
 114984
MISSING (IN MISSING (IN O -> QQ (IN O MW; 77420C78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₿).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
               ISOFORM
ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nuclear BTB-domain-containing
               1 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P element
```

Ì

```
RESULT 15
086731
ID 086731
AC 086731
                                                                                                                                                                                                                                                                                                                                                                                             Q 245057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 248057
Q 2
                                                                                                                                                               밁
                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ωy
                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
  086731
086731;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q24455 PRELIMINARY; PRT; 1085 AA. Q24455; Q2403; Q2403; 01-NOV-1996 (TrEMBLrel. 01, Created) 01-OCT-2000 (TrEMBLrel. 15, Last sequence update) 01-MAR-2001 (TrEMBLrel. 16, Last annotation update) PIPSQUEAK PROTEIN (BTB-V PROTEIN DOMAIN).
                                                                                                                                                                                                                                                                                                                                                                                                VARSPLIC
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-95024186; PubMed-7938017;

Zollman S., Godt D., Prive G.G., Couderc J.L., Laski F.A.;

Zollman S., Godt D., Prive G.G., Couderc J.L., Laski F.A.;

The BTB domain, found primarily in zinc finger proteins, of

evolutionarily conserved family that includes several devel

evolutionarily conserved family that includes several devel

regulated genes in Drosophila.";

Proc. Natl. Acad. Sci. U.S.A. 91:10717-10721(1994).

1- ALTERNARITYE PRODUCTS: 2 ISOFORMS; A LONG FORM (SHOWN HIS

SHORT FORM; ARE PRODUCED BY ALTERNATIVE SPLICING.

EMBL; X90986; CAA62473.1;

EMBL; X90986; CAA62474.1;

EMBL; U14402; AAA50837.1;

EMBL; U14402; AAA50837.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Arthropoda; Tracheata; He
Pterygota; Neoptera; Endopterygota; Diptera;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alternative splicing. VARSPLIC 428 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00651; BTB; 1.
PROSITE; PS50097; BTB; 1.
SMART; SM00225; BTB; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "pipsqueak encodes a novel nuclear protein required downstream seven-up for the development of photoreceptors R3 and R4.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=96134923; PubMed=8557044; Weber U., Siegel V., Mlodzik M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ephydroidea; Dro
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Interpro; IPR000210; -.
Interpro; IPR002197; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FlyBase; FBgn0004399; psq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 8-105 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBO J. 14:6247-6257(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PSQ OR CG2368.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         332
                                                                                                                                                               332 HEHEHNHGHGHGH----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 HGHEQQHGLGHGHKFKLDDDLEHQGGH 27
                                                                                                                                                                                                           1 HGHEQQHGLGHGHKFKLDDDLEHQGGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HEHEHNHGHGHGH-----
                                                                                                                                                                                                                                                               Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                536
1085
                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                             1084
AA; 117039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (LONG AND SHORT ISOFORMS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    37.4%;
44.4%;
                                                                                                                                                                                                                                                                                     37.48;
                                                                                                                                                                                                                                                                                                                                                                                                MW;
                                                                                                                                                                                                                                                            Score 62.5; I
Pred. No. 2.1;
0; Mismatches
                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GGH 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 62.5;
Pred. No. 2.
                                                                                                                                                               GGH 347
                                                                                                                                                                                                                                                                                                                                                                                                                         ARTRAIYQIPPNRSI (IN SHORT ISOFORM).
MISSING (IN SHORT ISOFORM).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NGGLLGVPMGELDFTPEPPAPSAFPVTTEHVDLSCMPSTD
TRDLSNTTEPLDIDNHLAQQIHRLDQSPMHSISHHHTGDES
NSNLVQHIKESVIEAKHLAQOHHRLS -> VSWLASFGLVS
KSQQISQLARDRSQIGSPQARMNINFANLTIPISLSTRIWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACRTAACWACPWDSWTSHPSHQHHLPPQSPSRSTSICPATL
                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                             27
                                                                                                                                                                                                                                                                                                                                                                                                EF32BFC73C2B737D CRC64;
                              314 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DΒ
                                                                                                                                                                                                                                                                                                                DВ
                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>ა</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                               4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1064;
                                                                                                                                                                                                                                                                                                              Length 1085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   developmentally
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HERE) AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           defines an
                                                                                                                                                                                                                                                               11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u>ب</u>
                                                                                                                                                                                                                                                               ۳.
```

Search completed: July Job time: 990 sec

6

2001,

09:25:54

0;

```
밁
                   QΥ
                                                                                                    Matches
                                                      Query Match
Best Local
                                                                                                                                   the 8 Mb Streptomyces coelicolor A3(2) chromosome."; Mol. Microbiol. 21:77-96(1996).
EMBL; AL031515; CAA20646.1; -.
                                                                                                                                                                                                                                                                                                                                                                       Streptomyces coelicolor.

Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.

NCBI_TaxID-1902;
                                                                                                                                                                                                                                                                                                                                                                                                                     HYPOTHETICAL
SC5C7.34.
                                                                                                                                                                                                                                                                                                                                                                                                                               01-NOV-1998 (TrEMBLrel. 08, Created)
01-NOV-1998 (TrEMBLrel. 18, Last sequence update)
01-UN-2000 (TrEMBLrel. 14, Last annotation updat)
HYPOTHETICAL 33.6 KDA PROTEIN.
                                                                                                   Hypothetical protein. SEQUENCE 314 AA; 33586 MW;
                                                                                                                                                                                 Redenbach M., Kieser H.M., Denapaite
Kinashi H., Hopwood D.A.;
                                                                                                                                                                                                                                                       Parkhill J., Barrell Submitted (SEP-1998)
                                                                                                                                                                                                                                                                                                                             STRAIN=A3(2);
Seeger K.J.,
                                                                                                                                                                                                          MEDLINE=97000351; PubMed=8843436;
                                                                                                                                                                                                                      STRAIN=A3(2);
                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                             STRAIN=A3(2);
                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                 Submitted (SEP-1998)
                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                         InterPro;
                                                                                                                                                                      "A set of
18
                    1 HGHEQQHGLGHGH
нснооснонснон
                                          10;
                                                       Similarity
                                                                                                                                                                      ordered cosmids and a detailed
                                                                                                                         IPR000051; -.
                                           Conservative
                                                                                                                                                                                                                                                                                                                             Harris
                    13
30
                                                                                                                                                                                                                                                                                                                             .
.
                                                      37.1%;
76.9%;
                                                                                                                                                                                                                                                        B.G., F
to the
                                                                                                                                                                                                                                                                                                                 ţ
                                                                                                                                                                                                                                                                                                                 the
                                                                                                                                                                                                                                                       Rajandream M.A.;
e EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                 EMBL/GenBank/DDBJ databases
                                           0
                                                      Score 62; DB 2
Pred. No. 0.68;
                                                                                                    7CA3288CC28FF007 CRC64;
                                          Mismatches
                                                                                                                                                                                             D.,
                                                                 DB 2;
                                                                                                                                                                      genetic and physical map for
                                                                                                                                                                                              Eichner
                                                                                                                                                                                                                                                                                                                                                                                                                                             update)
                                           Ψ
                                                                                                                                                                                                                                                        databases
                                                                 Length 314;
                                                                                                                                                                                            Α.,
                                           Indels
                                                                                                                                                                                              Cullum J.,
                                           0;
                                           Gaps
```

V . . . . 

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                on :
                                                                                                                                                                                                                                                                                                     score greater
and is derived
                                                                                                                                                                                                                                                                                                                                            Pred. No.
                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                     d. No. is the number of results predicted by chance to h
re greater than or equal to the score of the result bein
is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         seq
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A_Geneseq_0601:*

1: /SIDSB/gcgdata,

2: /SIDSB/gcgdata,

3: /SIDSB/gcgdata,

4: /SIDSB/gcgdata,

5: /SIDSB/gcgdata,

6: /SIDSB/gcgdata,

7: /SIDSB/gcgdata,

8: /SIDSB/gcgdata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length: 0
length: 2000000000
                                                                                                                                                                                                                   Query
Match
     100.0
100.0
100.0
100.0
100.0
97.2
97.2
97.2
97.2
97.2
80.2
                                                                                                                                                                                                                                                                                                                                                                             9:
110:
111:
112:
113:
114:
115:
116:
116:
118:
119:
120:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412676 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-437-912-6
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             July
                                                                                                                                                                                                                                                                                                                                                                    SIDS8/gcgdata/geneseq/geneseqp/AA1988.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1990.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1991.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1993.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1994.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1995.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1997.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA1999.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA2000.DAT:*

SIDS8/gcgdata/geneseq/geneseqp/AA2001.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA1982.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA1984.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA1986.DAT:*
/SIDS8/gcgdata/geneseq/geneseqp/AA1987.DAT:*
                                                                                                                                                                                                                   Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6, 2001, 09:09:18; Search time 113.68 Seconds (without alignments) 14.932 Million cell updates/sec
       28
94
179
186
255
255
62
63
63
131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60623988 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gapext 0
                                                                                                                                                                                                                   IJ
   AAY81997
AAY93351
AAY93349
AAY93349
AAY93342
AAY93345
AAY93346
AAX793348
AAR75181
                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28
                                                                                                                                                                                                                                                                                                                 chance to have a result being printed,
Human high molecul Light chain of hum Light chain of hum Light chain of hum Light chain of hum Light chain of hum Light chain of hum Light chain of hum Partial peptide of Partial peptide of Partial peptide of
                                                                                                                                                                                                                   Description
```

	AAG29679	21	374	33.6	9.	01
	AAG29680	21	294	•	59.5	-
Recombinant mite a	AAR76478	16	149	•	61	w
a	AAR95607	17	1085		61.5	۰
g	AAR56496	15	1189	35.0	62	_
İS	AAG22953	21	453	•	62	_
	AAG06063	21	425	•	62	•
	AAG22954	21	389		62	w
	AAG06064	21	389	•	62	7
is	AAG22955	21	309	•	62	0,
	AAG06065	21	309	•	62	٠,
of 1	AAR24393	13	351	•	63	-
	AAG43478	21	398	•	64.5	ω
is	AAG22263	21	398	36.4	64.5	~
	AAG43479	21	344	36.4	4.	
	AAG22264	21	344	36.4	.4	_
	AAG43480	21	330	36.4	64.5	ω
Arabidopsis thalia	AAG22265	21	330	36.4		w
Partial peptide of	AAR75179	16	69	37.3	66	7
Food additive prot	AAR26414	13	85	•	66.5	٠,
g prot	AAW25029	18	1213	37.9	67	01
Drosophila TATA-bi	AAW06086	17	1213	•	67	-
	AAY93352	21	11	•	68	w
Arabidopsis thalia	AAG46905	21	179	•	69	~
S	AAG24334	21	179	•	69	_
res	AAW72390	19	180		72.5	U
idopsi	AAG42194	21	177	•	2	v
Human high molecul	AAY81995	21	12	•	74	w
high molec	AAY81994	21	12	•	79	7
two-chain	9	21	16	55.4	98	U١
two-ch	AAB06337	21	16	•	98	Oi
HKH20 pepti	18	21	19	55.6		-
n high polyme	76	17	20	•	125	w
Partial peptide of	AAR75178	16	110	80.2	4	~

## ALIGNMENTS

```
PF XX PR PA PA XX
                                                                                                                                                            XX PN
                                                                                                                                                                                                            AAY81997
                                                                                                                                                                                                                                               Human; high molecular weight kininogen; HK;
two-chain high molecular weight kininogen; HKa;
angiogenesis inhibition; tumour; cancer; ocular disorder;
rheumatoid arthritis; endothelial cell apoptosis.
A pharmaceutical composition used to inhibit angiogenesis, inhibit endothelial cell proliferation, and induce endothelial cell apoptosis
                                    WPI; 2000-376483/32.
                                                                                                                                                                                                                                                                                                                                   16-OCT-2000 (first entry)
                                                                                                                         10-NOV-1998;
                                                                                                                                                05-NOV-1999;
                                                                                                                                                                         18-MAY-2000
                                                                                                                                                                                                WO200027866-A1
                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                         Human high molecular weight kininogen domain 5 fragment #6
                                                                                                                                                                                                                                                                                                                                                             AAY81997;
                                                                                                                                                                                                                                                                                                                                                                                   AAY81997 standard; peptide;
                                                                                    (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                           ш
                                                                                                                         98US-0107833
                                                                                                                                                99WO-US26419
                                                                                                                                                                                                                                                                                                                                                                                     28
                                                                                                                                                                                                                                                                                                                                                                                     B
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAY93351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence is derived from human high molecular weight kininogen (HK) domain 5. HK is a 120 kD glycoprotein which binds with high affinity to endothelial cells, where it is cleaved to two-chain high molecular weight kininogen (HKa) by plasma kallikrein. Hka or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting angiogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a
                                           Claim 8;
                                                                     that
                                                                                                             WPI; 2000-376306/32
                                                                                                                                       Colman WR, Mousa AS
                                                                                                                                                                                                                                                                   09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                   Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                         Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-SEP-2000
                                                                                    Method
                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                             endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAY93351 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 13;
                                                                                                                                                                  (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                         10-NOV-1998;
                                                                                                                                                                                                                                                                                              18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                     HOMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inhibiting endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically synthesised, using, for example, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GHKHKHGHGKGKKKKKKKKKKKKKKT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N
                                                                     od for inhibiting en inhibit endothelial
                                                                                                                                                                                                                                                                                                                                                   sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Page 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                                                                                             cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                 of human high molecular weight kininggen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                       98US-0107844
                                                                                                                                                                                                                                                                   99WO-US26377
                                                                                                                                                                                                                                                                                                                                                                                            proliferation;
                                         41pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%;
                                                                     endothelial cell
lal cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 177;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                             endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                  proliferation, using
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptides. They may also le, solid phase synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 21;
.8e-15;
                                                                                                                                                                                                                                                                                                                                                                                            cell migration; vitronectin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28;
                                                                                  compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY93353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kbm glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                          Method for inhibiting endothelial cell proliferation, using
                                                                                                                                                                                                                                                                           WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                          Colman
                                                                                                                                                                                                                                                                                                                                     (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Light chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                           that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                      10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY93353;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93353 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ghkhkhghghgkhknkgkkngkhngwkt
                                                                                                                                                                                                                                                                                                        WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        high molecular weight kininogen; glycoprotein; endothelial cell; kallikrein; heavy chain; light chain; analogue; angiogenesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                          Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        of
                                                                                                                                                                                                                                                                                                        Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA,
                                                                                                                                                                                              40-41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           proliferation; endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                         41pp;
                                                                                                                                                                                          English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 177; DB 21; Pred. No. 6.4e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94;
                                                                                                                                                                                                                                           compound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SXC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
 Query Match
Best Local S
Matches 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                      The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                               Claim 9;
                                                                                                                                                                                                                                                                                                                                                       Colman WR, Mousa AS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY93349;
                                                                                                                                                                                                                                                                                                     Method
                                                                                                                                                                                                                                                                                                                               WPI; 2000-376306/32
                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200027415-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY93349 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                                                                                                                           (UTEM ) UNIV TEMPLE
(DUPO ) DUPONT PHARI
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HOMO
                                                                                                                                                                                                                                                                                                                                                                                 (MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                     od for inhibiting endothelial cell proliferation, using compound
inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sapiens.
  28;
                                                                                                                                                                                                                                                                                                                                                                                           DUPONT PHARM CO COLMAN W R.
                Similarity
                                                                                                                                                                                                                                                             Page 38; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ä
                                                                 Ā,
                                                                                                                                                                                                                                                                                                                                                                                                                                              98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide;
             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
  0
Score 177; DB 21;
Pred. No. 1.3e-14;
Pred. No. 1.3e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 177;
Pred. No. 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 21;
.2e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                         Length
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                            186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              179;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0,
  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
  Gaps
  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

RESULT AAY93345 ID AAY9

σ

AAY93345 standard;

peptide; 47

AA

PC X

AAY93345;

```
RESULT
AAY93342
                                                                                                                          밁
                           δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QY
                                                                    Query Match
Best Local :
                                                       Matches
                                                                                                                                                               Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to
                                                                                                                                                                                                                                                             The present sequence represents the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains.
                                                                                                                                                                                                                                                                                                                                                                                                                                Colman WR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin.
                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                Disclosure; Page 3; 41pp;
                                                                                                                                                                                                                                                                                                                                                                        Method for inhibiting endothelial cell proliferation, using compound
                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Light chain of human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY93342;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY93342 standard; protein;
                                                                                                                                                     inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                           that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (NOUS/)
    105
                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36
               1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
ghkhkhghghgkhknkgkkngkhngwkt 132
                                                       28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOUSA A S.
                                                                                                                          255 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                Mousa AS
                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99WO-US26377.
                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      high
                                                                                                                                                                                                                                                                                                                                English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      molecular weight kininogen.
                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255 AA
                                                                    Score 177; DB 21; Pred. No. 1.8e-14;
                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28
                                                                                                                                                     to vitronectin.
                                                       .0
                                                       Indels
                                                                               Length
                                                                                  255;
                                                       0;
                                                       Gaps
                                                       0;
```

```
RESULT
AAY93348
ID AAY9
XX AAY9
AC AAY9
XC AAY9
XX Ligh
XX Ligh
XX Huma
KW Plass
KW endo
                                                                                                                                                                                                                                                                                                                                                                                                 Ωy
                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 27
Human; high molecular weight kininogen; glycoprotein; endothelial cell; plasma kallikrein; heavy chain; light chain; analogue; angiogenesis; endothelial cell proliferation; endothelial cell migration; vitronectin
                                                                   Light chain
                                                                                                    04-SEP-2000
                                                                                                                                                                   AAY93348 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                       The present sequence represents a fragment of the light chain of huma high molecular weight kininogen. It is used to produce compounds of the invention. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to the invention of analogues is the compounds can also be used to the thirt with the compounds can also be used to the thirt with the compounds can also be used to the compounds can also be used to the compounds can also be used to
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 3; Page 36; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Colman WR, Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                            inhibit migration of endothelial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM CO.
(COLM/) COLMAN W R.
(MOUS/) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Light chain of human high molecular weight kininogen
                                                                                                                                                                                                                                                  1 GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      inhibit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000-376306/32.
                                                                                                                                                                                                                                                                                                                Similarity 100.
27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       high molecular weight kininogen; glycoprotein; endoth
kallikrein; heavy chain; light chain; analogue; angion
elial cell proliferation; endothelial cell migration;
                                                                                                                                                                                                                                                                                                                                                                                                 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                inhibiting endothelial cell proliferation, using compound it endothelial cell migration \,\cdot\,
                                                              of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                 <u>Α</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    98US-0107844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99WO-US26377
                                                                                                                                                                   peptide;
                                                                                                                                                                                                                                                                                                                               97.2%;
                                                                                                                                                                                                                                                                                                                             Score 172; DB 21; Pred. No. 1.3e-14;
                                                                                                                                                                   62
                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                             to vitronectin.
                                                                                                                                                                                                                                                                                                                                             Length 47;
                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         endothelial cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          angiogenesis;
                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : human
                                                                                                                                                                                                                                                                                                                0
```

```
DE XXX OS XXX PN PR XXX
                                                                                                                                                                                                                                                                                                              Вb
                                                                                                                                                                                                                                                                                                                                   Qy
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                             AAR75186
                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                               The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kba glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used for inhibiting angiogenesis. The compounds can also be used to inhibit migration of endothelial cells to vitronectin.
                         17-SEP-1993;
                                                  28-MAR-1995
                                                                                                                             high molecular weight; kininogen; fragment; 1.2; wound treating agent; bovine; growth promotion;
                                                                                                                                                                   Partial peptide of human HMW kininogen fragment
                                                                                                                                                                                                                                                AAR75186
                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Method for inhibiting endothelial cell proliferation, using compound that inhibit endothelial cell migration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Colman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NOUS/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COLM/)
                                                                                                                                                                                                                                                                                                              36
                                                                                                                                                                                                                                                                                                                                     1 GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                         œ
                                                                                                                                                                                                                                                                                                          WR,
                                                                                                                                                                                                                                                                                                                                                              27; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DUPONT PHARM CO.
COLMAN W R.
MOUSA A S.
                                                                                                                                                                                                                                               standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Page 37;
                                                                                                                                                                                                                                                                                                                                                                                                                            62
                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mousa AS
                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                          ΑĀ;
                         93JP-0230616.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-0107844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41pp;
                                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                    97.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   English.
                                                                                                                                                                                                                                                                                                                                                              0,
                                                                                                                                                                                                                                                                                                                                                                        Score 172; DB 21; Pred. No. 1.7e-14;
                                                                                                                                                                                                                                               Ą
                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                      62
                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                             Gaps
```

17-SEP-1993;

93JP-0230616

V

0;

```
RESULT
AAY93347
   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 27
The present sequence represents an analogue of the light chain of human high molecular weight kininogen. High molecular weight kininogen is a 120 kDa glycoprotein which binds with high affinity to endothelial cells, where it is cleaved by plasma kallikrein into heavy and light chains. Analogues of high molecular weight kininogen are used in the method
                                                                                                                                                                                                                                                                                                                                                                                                                                  Light chain of human high molecular weight kininogen analogue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A wound treating agent contq. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                         Claim
                                                                                                             Method
                                                                                                                                                             Colman WR,
                                                                                                                                                                                                                                                                        09-NOV-1999;
                                                                                                                                                                                                                                                                                                                         WO200027415-A2
                                                                                                                                                                                                                                                                                                                                                                                    endothelial cell
                                                                                                                                                                                                                                                                                                                                                                                                 plasma
                                                                                                                                                                                                                                                                                                                                                                                                                                                            04-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAY93347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAY93347 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 agent
                                                                                                                                                                                                            (UTEM ) UNIV TEMPLE.
(DUPO ) DUPONT PHARN
                                                                                                                                                                                                                                                 10-NOV-1998;
                                                                                                                                                                                                                                                                                                 18-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR75186 is a partial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (FARH ) HOECHST JAPAN
                                                                                                                                                                                                 (COLM/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  9
                                                                                              od for inhibiting endothelial cell proliferation, using compound inhibit endothelial cell migration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ghkhkhghghgkhknkgkkngkhngwk 63
                                                                                                                                     2000-376306/32.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ent 1, amino acids 458-520. Partial peptides of bovine and kininogen fragments 1.2, 1 and 2, are used in wound treating compsns, and act as the active component. The fragments are 1 in wound treating because they have growth promotion activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8;
                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                 high molecular weight kininogen; glycoprotein; endothelial cell; kallikrein; heavy chain; light chain; analogue; angiogenesis; elial cell proliferation; endothelial cell migration; vitronectin
                                                                                                                                                                                 ) DUPONT PHARM CO.
) COLMAN W R.
) MOUSA A S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 8; 8pp; Japanese.
                                                                        Page 37; 41pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63 AA;
                                                                                                                                                             Mousa AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                 98US-0107844.
                                                                                                                                                                                                                                                                         99WO-US26377.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 즛
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 172; I
Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     corresponding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ng to human kininogen peptides of bovine a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nts are
activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

밁

105

0,

RESULT 11 AAR75180

```
RESULT
AAR75181
ID AAR
                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8888888x&
                       Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                Matches
                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of the invention. The specification describes a method of inhibiting endothelial cell proliferation. The method comprises contacting endothelial cells with a compound containing high molecular weight kininogen analogues. The method and the compounds can be used for inhibiting endothelial cell proliferation. The compounds can also be used to
                                                                                                                                      AAR75181 is a partial peptide corresponding to human kininogen fragment 1.2, amino acids 390-520. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent componens. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                                       Sequence
                                                                                                                                                                                                               Claim
                                                                                                                                                                                                                                                                         WPI; 1995-158909/21.
                                                                                                                                                                                                                                                                                                                                                                                                                                     high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; human; growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                      have
                                                                                                                                                                                                                                                 A wound
                                                                                                                                                                                                                                                                                                                       17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                             17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                    28-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                          JP07082172-A.
                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Partial peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR75181 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    inhibit migration of endothelial cells to vitronectin.
                                                                                                                                                                                                                                                                                              (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10
                        1 GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                               tibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
und treating agent contg. a partial peptide of kininogen growth promotion activity of fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     27;
                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                            Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83
                                                                                                        131 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                      93JP-0230616
                                                                                                                                                                                                                                                                                                                                             93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of human HMW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide;
                                                          97.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97.2%;
                                                                                                                                                                                                                                                                                                Š
                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                          Score 172;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         kininogen fragment 1.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 172;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2.3e-14;
                                                           ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                    DB 16;
                                                          .7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21;
                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                     Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83;
                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

```
RESULT 1
AAR75178
                                                                                                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                      Best
                                                                                                                                                                                                                                                                                                                             Query Match
 JP07082172-A
                             Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                     AAR75179 is a partial peptide corresponding to bovine kininogen fragment 2, amino acids 456-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compsns. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                 Misc-difference
                                                                                                     Bos taurus
                                                                     Misc-difference
                                                                                                                     high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; bovine; growth promotion; fibroblast.
                                                                                                                                                     Partial peptide of HMW kininogen fragment 1.2.
                                                                                                                                                                          05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                                                                                                                                             AAR75178;
                                                                                                                                                                                                                 AAR75178 standard;
                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (FARH ) HOECHST JAPAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JP07082172-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              high molecular weight; kininogen; fragment; 1.2; 1; 2; partial; wound treating agent; bovine; growth promotion; fibroblast.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Partial peptide of HMW kininogen fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-DEC-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR75180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR75180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAR-1995
                                                                                                                                                                                                                                                             15 ghghkhghghgkhknkgknngkhydwr 41
                                                                                                                                                                                                                                     12
                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                                                                                                                                             1 GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                 fibroblasts.
                                                                                                                                                                                                                                                                                                          l Similarity
22; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Page 7; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         standard;
                                                                                                                                                                                                                                                                                                                                                            41
                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                            Ä,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .93Jb-0230616
                                                /label= Pro,
                           /label= Val or Leu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93JP-0230616
                                                                     Location/Qualifiers
                   /label= Lys or Arg
                                                                                                                                                                                                                 peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        peptide; 41
                                                                                                                                                                                                                                                                                                                   80.2%;
81.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KΚ.
                                                                                                                                                                                                                 110
                                                                                                                                                                                                                                                                                                        Score 142; DB Pred. No. 5.2e 1; Mismatches
                                                                                                                                                                                                                                                                                                         ۲.
                                                           Thr
                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                   DB 16;
.2e-11;
                                                                                                                                                                                                                                                                                                                           Length 41;
                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                         0
```

```
PT PT XX
                                                                                                                                            PNXX
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                      11
13
14
                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
AAW07625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local
Cell adhesion inhibiting peptide(s), used as cancer metastasis inhibitor – comprises partial amino acid sequence of human high polymer quininogen {\bf L} chain
                                               WPI; 1996-421988/42
                                                                                                                                                                                                                                                                                            Human; high polymer; quininogen; L-chain; cell adhesion; cancer metastasis; platelet aggregation; inhibition; wound; inflammatory disease; arteriosclerosis; glomerular nephritis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR75178 is a partial peptide corresponding to bovine kininogen fragment 1.2, amino acids 387-496. Partial peptides of bovine and human kininogen fragments 1.2, 1 and 2, are used in wound treating agent compones. and act as the active component. The fragments are useful in wound treating because they have growth promotion activity
                                                                                              28-SEP-1994;
                                                                                                                                            13-AUG-1996
                                                                                                                                                                                                                                       Key
                                                                                                                     28-SEP-1995;
                                                                                                                                                                   JP08208692-A.
                                                                                                                                                                                                    Peptide
                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                            Human high polymer quininogen L-chain derived peptide.
                                                                                                                                                                                                                                                                                                                                                                    04-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                            AAW07625;
                                                                                                                                                                                                                                                                                                                                                                                                               AAW07625 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 4; Page 6; 8pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A wound treating agent contg. a partial peptide of kininogen have growth promotion activity of fibroblasts.
                                                                      (SUMU ) SUMITOMO SEIYAKU KK
                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                     treatment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1995-158909/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (FARH ) HOECHST JAPAN KK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-SEP-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAR-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GHKHKHGHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fibroblasts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ghghkhghghgkhknkgknngkhydwr 110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l Similarity 81.9
22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110 AA;
                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                            94JP-0259451
                                                                                                                    95JP-0276418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93JP-0230616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93JP-0230616.
                                                                                                                                                                                                    /note=
13..20
                                                                                                                                                                                        /note=
                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80.2%;
                                                                                                                                                                                        "claimed peptide (claim 6)"
                                                                                                                                                                                                              "claimed peptide (claim 1)"
                                                                                                                                                                                                                                                                                                                                                                                                                20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 142; DE
Pred. No. 1.4e
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
```

۲,

```
RESULT 1
AAY71879
ID AAY7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                           29-APR-1999;
06-MAY-1999;
01-OCT-1999;
           The patent discloses a method for preventing or treating a disorder resulting from the release of bradykinin in a mammal which produces a heparin-binding protein (HBP) that binds to a HBP antagonist (especially method involves administration of a mammalian HBP antagonist (especially aprottinin) and/or monoclonal antibodies that bind to prekallikrein-H-kininogen complexes in the HBP, to decrease the release of bradykinin in the mammal. The antagonists of HBP (e.g. aprotinin) decrease the permeability of the endothelial cells and are used to prevent or treat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are useful in cell adhesion, cancer metastasis or platelet aggregation inhibitors, and in wound, inflammatory disease, arteriosclerosis or glomerular nephritis treating agents. The present peptide was synthesised using a solid phase method, and purified using a YMC-DOS-120A-S15/13 column.
                                                                                                                                                                         Treating systemic inflammatory response syndrome, anaphylaxis and allograft rejection by modulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; heparin binding protein; HBP; antiinflammatory; cardiovascular; immunosuppressive; vascotropic; prevention; treatment; bradykinin; aprotinin; H-kininogen; HK; systemic inflammatory response syndrome; pre-kallikrein; ischaemia reperfusion; anaphylaxis; allograft rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim
 disorders
                                                                                                                                                                                                                                                                                                                                                                28-APR-2000; 2000WO-DK00213
                                                                                                                                                                                                                                                                                                                                                                                            09-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                      WO200066151-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAY71879;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY71879 standard;
                                                                                                                                     Example
                                                                                                                                                                                                                                                                    (NOVO ) NOVO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 HKHGHGHGKHKNKGKKNGKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hkhghghgkhknkgkkngkh 20
                                                                                                                                                                                                                  2000-687445/67.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         respiratory distress syndrome; HKH20 peptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           402-498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Page 2;
                                                                                                                                                                                                                                            , LH
 resulting
                                                                                                                                   Page 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                       NORDISK AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ą
                                                                                                                                                                                                                                           Lindbom L,
                                                                                                                                                                                                                                                                                               99DK-0001402
99US-0157384
                                                                                                                                                                                                                                                                                                                         99US-0132748.
99DK-0000613.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         of the human high polymer quininogen L-chain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     peptide;
 from
                                                                                                                                  75pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        derived
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and its claimed fragments,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     70.68;
 the release
                                                                                                                                                                                                                                         Bjorn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 125; pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     from domain 5 of H-Kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ₿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                            ŝ
s and are used to of bradykinin suc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .9e-09;
s 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      are derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                          ischaemia reperfusion, release of bradykinin
 such as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (479-498 aa).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
RESULT 15
AAB06337
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2222222223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                         or a synthetic compound comprising the present sequence may be used in a pharmaceutical composition for inhibiting anglogenesis. Angiogenesis occurs in a number of disease states, such as tumour formation and expansion, and certain ocular disorders. It can also occur in a rheumatoid joint, hastening joint destruction by allowing an influx of leukocytes. The composition may inhibit angiogenesis by inhibiting endothelial cell proliferation or by inducing endothelial cell proliferation or by inducing endothelial cell apoptosis. Peptides used in the compostion may be recombinant peptides, natural peptides, or synthetic peptides. They may also be chemically
                                                                                                                                                                           The present sequence is derived from human two-chain high molecula weight kininogen (HKa) domain 5. HKa is product of high molecular weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 weight kininogen (HK) cleavage by plasma kallikrein. HK is a 120 squipt kininogen which binds with high affinity to endothelial cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                respiratory distress syndrome. The present sequence is HKH20 peptide which is derived from the domain 5 of human H-Kininogen (HK) protein (479-498 residues). HKH20 treatment of endothelial cells inhibits or prevents the HBP-induced increase in permeability of the endothelial cells.
                                                                                                                                                                                                                                                           Claim
                                                                                                                                                                                                                                                                                                                        A pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  angiogenesis inhibition; tumour; cancer; ocurar wrheumatoid arthritis; endothelial cell apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     two-chain high molecular weight kininogen; HKa; angiogenesis inhibition; tumour; cancer; ocular disorder;
             synthesised,
                                                                                                                                                                                                                                                                                                           endothelial cell
                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-376483/32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200027866-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB06337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB06337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   inflammatory response syndrome, ischaemia reperfusion, anaphylaxis and/or allograft rejection. They are also used to treat adult
                                                                                                                                                                                                                                                                                                                                                                                           McCrae RK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-NOV-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-NOV-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-MAY-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; high molecular weight kininogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human two-chain high molecular weight kininogen domain 5 fragment
                                                                                                                                                                                                                                                                                                                                                                                                                         (UTEM ) UNIV TEMPLE (MCCR/) MCCRAE R K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 HKHGHGHGKHKNKGKKNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hkhghghhk-knkgkkngkh 19
                                                                                                                                                                                                                                                             15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    standard;
                                                                                                                                                                                                                                                           Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
               using,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                             29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9805-0107833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99WO-US26419
                                                                                                                                                                                                                                                                                                         composition used to inhibit angiogenesis, inhibit proliferation, and induce endothelial cell apopto:
                                                                                                                                                                                                                                                        52pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Protein;
                 for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    55.6%;
90.0%;
               example,
                                                                                                                                                                                                                                                           English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 98.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
               solid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98.5;
             phase synthesis methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.8e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DΒ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                         cell apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19;
                                                                                                                                                                                                                             molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u>ب</u>
                                                                                                                                                                                            120 kD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
· Fii Jul 6 09
```

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Run
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              on:
 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score
 $\text{SUBSUBSERVED SUBSUBSERVED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seq
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Issued_Patents_AA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       length:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match
193259 seqs,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   us-09-437-912-6
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GHKHKHGHGKGKKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /cgn2_6/ptodata/2/iaa/backfiles1.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6, 2001, 09:10:22; Search time 56.74 Seconds (without alignments) 9.941 Million cell updates/sec
ВB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20144635 residues
                               US-08-18-582-20
US-08-431-080-28
US-08-942-112-32
US-08-942-12-32
US-09-208-742-28
US-09-456-287-2
US-09-456-287-2
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-102
US-08-594-031-02-1
US-09-115-032-1
PCT-US95-05772-1
US-09-303-433A-4
US-08-303-025-2
US-08-303-025-2
US-08-3137-6148-2
US-08-137-6148-2
US-08-137-6148-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ħ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               193259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                Sequence
Sequence
                                                                                                                                                                                                                                                                                                                      Sequence
Sequence
                 Sequence
                                 Sequence
                                                     Sequence
                                                                           Sequence
                                                                                          Sequence
                                                                                                            Sequence
                                                                                                                                Sequence
                                                                                                                                                                                       Sequence
                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                               100, App
102, App
1, Appli
                                                                                                                                                                                                                                                                                                                    28, Appl
32, Appli
2, Appli
3, Appli
3, Appli
3, Appli
2, Appli
2, Appli
                                                     Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
Appli
               App1
```

•	45	44	43	42	41	40 .	39	38	37	36	35	34	33	32	31	30	29	28
	50	50	50	50	50	50	51	51	51	51	51.5	51.5	51.5	51.5	51.5	51.5	53	53
	28.2	28.2							28.8		29.1	29.1	29.1	29.1	29.1	29.1	29.9	29.9
	575	575	345	345	113	113	651	651	402	400	1044	1032	452	452	54	53	637	637
	2	ν	4	Ν	w	N	N	<u>, -</u>	w	5	4	4	щ	_	N	Ν	ഗ	ω
	US-08-993-318A-8	US-09-032-315-8	US-09-107-858-14	US-08-758-621-14	US-09-205-680A-7	US-08-918-727-7	US-08-938-534-24	US-08-431-080-24	US-08-602-809-2	PCT-US95-16472-2	US-09-115-954-2	US-09-115-954-8	US-08-271-883-6	US-08-434-702-6	US-08-651-818A-23	US-08-651-818A-19	PCT-US92-08558-1	US-08-072-064-8
	Sequence 8, Appli	Sequence 8, Appli	Sequence 14, Appl	Sequence 14, Appl	Sequence 7, Appli	Sequence 7, Appli	Sequence 24, Appl	Sequence 24, Appl	Sequence 2, Appli	Sequence 2, Appli	Sequence 2, Appli	Sequence 8, Appli	Sequence 6, Appli	Sequence 6, Appli	Sequence 23, Appl	Sequence 19, Appl	Sequence 1, Appli	Sequence 8, Appli

ALIGNMENTS

## ; MOLECULE TYPE: US-08-188-582-20 RESULT 1 US-08-188-582-20 Sequence 20, Applice Patent No. 5534410 TELEFAX: (415) 398-324 TELEX: 910 277299 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: APPLICANT: APPLICANT: APPLICANT: APPLICANT: APPLICANT: COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA: TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 781-1989 TELEFAX: (415) 398-3249 APPLICANT: Weinzierl, Robert O.J. TITLE OF INVENTION: TATA-BINDING PROTEIN ASSOCIATED TITLE OF INVENTION: NUCLEIC ACIDS ENCODING TAFS AND ATTORNEY/AGENT INFORMATION: CORRESPONDENCE ADDRESS: NUMBER OF SEQUENCES: APPLICANT: APPLICANT: TYPE: ami STREET: CITY: S APPLICATION NUMBER: FILING DATE: 28-JAN CLASSIFICATION: 435 NAME: Osman, Richard A REGISTRATION NUMBER: 36, REFERENCE/DOCKET NUMBER: ZIP: 94111-4187 COUNTRY: LENGTH: ADDRESSEE: INFORMATION: San Francisco amino acid California Application US/08188582 4 Embarcadero Center, 1213 amino acids USA Ruppert, Siegfried Tanese, Naoko Tjian, Robert Comai, Lucio Dynlact, Brian D. Wang, Edith Hoey, Timothy linear protein 28-JAN-1994 N: 435 Robert 4 A 36,627 US/08/188,582 A-57650-2/AJT/RAO TEST, ALBRITTON & HERBERT er, Suite 3400 Version #1.25 METHODS OF USE

Query Match

37.98;

Score 67;

DB 1;

Length 1213;

Best Local Similarity

57.9%;

Pred. No. 1.7;

GENERAL INFORMATION:

```
RESULT 3
US-08-431-080-28
; Sequence 28, Applic
; Patent No. 5698686
                                                                                                    밁
                                                                                                                                 Ω
                                                                                                                                                                                                                                                   US-08-646-715-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Вр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-646-715-20
                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                 TELEX: 910 277299
INFORMATION FOR SEQ ID NO:
                                                                                                  1160 HKHKHKHRHSKDKDKERKD 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION UNDER: US 08/188,582
PILLING DATE: 28-JAN-1994
ATTORREY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1160 HKHKHKHRHSKDKDKERKD 1178
                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 1213 amino aci
                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: (415) 781-1989
TELEFAX: (415) 398-3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: TATA-BINDING PROTEIN ASSOCIATED FACTORS,
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING TAFS AND METHODS OF USE
NUMBER OF SEQUENCES: 36
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Rele
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 4 L....
CITY: San Francisco
                                                                                                                                                                                                                                                                                  TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Osman, Richard A
REGISTRATION NUMBER: 36,627
REFERENCE/DOCKET NUMBER: A-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                   2 HKHKHGHGHGKHKNKGKKN 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 HKHKHGHGHGKHKNKGKKN 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94111-4187
                  Application US/08431080
                                                                                                                                                                                                                                                                                                                    1213 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08646715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ruppert, sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 Embarcadero Center, Suite 3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wang, Edith
Weinzierl, Robert O.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hoey, Timothy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dynlact, Brian D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Comai, Lucio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FLEHR, HOHBACH, TEST, ALBRITTON & HERBERT
                                                                                                                                                                                                                                                                    protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-MAY-1996
                                                                                                                                                                                 37.9%;
57.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Siegfried
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/646,715
                                                                                                                                                                                                                                                                                                                                                                                                                                 A-57650-2/AJT/RAO
                                                                                                                                                                                    Score 67; D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                    DB 1; Length 1213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-431-080-28
                                                                                                                                                                                                                                                                                                                                                                   US-08-938-534-28
                                                                                                                                                                                                                                                                                                                      Patent No. 5916752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 28:
                                                          ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, White & Durkee
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                     APPLICANT: Gottschling, Daniel E. APPLICANT: Singer, Miriam S. TITLE OF INVENTION: Telomerase CONUMBER OF SEQUENCES: 32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1085 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: PAIKET, DAVID L.
REGISTRATION NUMBER: 32,165
REFERENCE/DOCKET NUMBER: ARCD:155/PAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: SN 08/326,781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Singer, Miriam S. TITLE OF INVENTION: Telomera
                                                                                                       COUNTRY: UN
ZIP: 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 19-0924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: F. STREET: F. Houston
                                                                                                                                                               STREET:
CITY: H
                                                                                                                                                                                                                                                                                                                                                                                                                                           512 GHKSKKGRHKSGKSHIEHKNKGSNLIKSN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS/ASCII
SOFTWARE: PatentIn Release #1.0, Vers
                                                                                                                                                STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid STRANDEDNESS: sir TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE: Concu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS/ASCII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: October 20, 1994 CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: U
ZIP: 77210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (512) 418-3000
TELEFAX: (713) 789-2679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GHK-----HKHGHGHGKHKNKGKKNGKHN 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                               Houston
                                                                                                                                                TEXAS
                                                                                                                                                                                  P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gottschling, Daniel E.
                                                                                                                            UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UNITED STATES OF AMERICA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arnold, White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Concurrently Herewith N: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34.7%;
                                                                                                                                                                                                                                                        Telomerase Compositions and Methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Telomerase Compositions and Methods
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US/08/431,080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 61.5; D
Pred. No. 6.9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

CLASSIFICATION: 536 PRIOR APPLICATION DATA:

APPLICATION NUMBER: US/0 FILING DATE: 26-SEP-1997

US/08/938,534

APPLICATION NUMBER: FILING DATE:

08/431,080

```
US-09-208-742-2
; Sequence 2, Application US/09208742
; Patent No. 6174679
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                    ; SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 32
; LENGTH: 515
; TYPE: PRT :
; ORGANISM: Spodoptera littoralis nuclear polyhedrosis virus US-08-942-012B-32
                                                                                                                         В
                                                                                                                                                         δÃ
                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-942-012B-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Miller, Lois K.
APPLICANT: Lu, Albert
                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 32, Application US/08942012B Patent No. 6235278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/08/942,012B CURRENT FILING DATE: 1997-10-01 PRIOR APPLICATION NUMBER: 08/729,606 PRIOR FILING DATE: 2000-10-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: Biological Insect Control Agents Expressing TITLE OF INVENTION: Insect-Specific Toxin Genes, Methods and ComFILE REFERENCE: 28-96a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: PAIKER, DAVID L.
REGISTRATION NUMBER: 32,165
REFERENCE/DOCKET NUMBER: ARCI
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512) 418-3000
TELEFAX: (713) 789-2679
TELEX: 79-0924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 1085 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: SN 08/326,781
FILING DATE: October 20, 1994
ATTORNEY/AGENT INFORMATION:
NAME: Parker, David L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           512 GHKSKKGRHKSGKSHIEHKNKGSNLIKSN 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: single
                                                                                                                         58 HNHNHGHRHHRHEN 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                       2 HKHKHGHGHGKHKN 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GHK-----HKHGHGHGKHKNKGKKNGKHN 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dierks, Peter
Black, Bruce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lu, Albert
                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34.7%;
                                                                                                                                                                                                                                                                                                                                                                                                  33
                                                                                                                                                                                                                 33.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ARCD:155/PAR
                                                                                                                                                                                                               Score 59;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 61.5;
Pred. No. 6.
                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                  DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DВ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9;
                                                                                                                                                                                                                                Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Methods and Compositions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1085;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                            0;
                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                              0,
```

RESULT 8 US-09-456-287-3

```
В
                             δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 1199
TYPE: PRT
ORGANISM: human
US-09-208-742-2
                                                                                                                                                   US-08-686-528A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 7
US-08-686-528A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 3, Application US/08686528A Patent No. 6054134
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 11; Conservat
                                                                Matches
                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/208,742
CURRENT FILING DATE: 1998-12-10
NUMBER OF SEQ ID NOS: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Kaufmann, Joerg
TITLE OF INVENTION: CIFI50/hTAFII150 is Necessary for Cell
TITLE OF INVENTION: Cycle Progression
FILE REFERENCE: 1453.002
                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: INFORMATION FOR SEQ ID NO: 3:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1146 НИНИННЕНККККККИКНКИКИ 1167
                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 313 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Rea, Teresa Stanek
REGISTRATION NUMBER: 30,
                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
                                                                                                                                                               MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Burns, Do
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: LINGWOO
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
113 НКИДИДИН-ДИКИЕНКИДИЕНИ 134
                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/686,528A FILING DATE: 26-JUL-1996 CLASSIFICATION: 424
                                                                               Local Similarity
                                                                                                                                                                                               STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: United States ZIP: 22314-2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET:
                                                                                                                                                                                  TOPOLOGY:
                           2 HKHKHGHGKHKNKKKKKKKKKHN 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 HKHKHGHGHGKHKNKGKKNGKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Burns, Doane, :
1737 King Street,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LINGWOOD, Clifford A.
ENTION: HAEMOPHILUS ADHESIN PROTEIN
                                                                                                                                                                                    linear
                                                                        31.9%;
43.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          33.3%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Doane, Swecker & Mathis, L.L.P. Street, Suite 500
                                                                                                                                                                                                                                                                                                   30,427
                                                                                                                                                                                                                                                                                     032609-001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 59;
Pred. No.
                                                                              Score 56.5;
Pred. No. 8
                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                        Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 4;
                                                                                             DB 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1199;
                                                                                             Length 313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                Indels
                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                ۲
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

Sequence 3, Application US/09456287 Patent No. 6218147

۲,

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear; MOLECULE TYPE: protein US-09-456-287-3
                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-686-528A-2
                                                                                                                                                                                                                                                                                                                                                                                       Sequence 2, Application US/08686528A Patent No. 6054134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: LINGWOOD,
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: INFORMATION FOR SEQ ID NO: 3:
                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 313 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM.TYPE: Floppy disk
COMPUTER: IBM COMPATIBLE
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Floppy disk
COMPUTER: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Rea, Teresa Stanek
                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113 НКНДНДН-ДНКНЕНКНДНЕНН 134
                                  APPLICATION NUMBER: FILING DATE: 26-JUI
                 CLASSIFICATION:
                                                                                                                                                                                                                                      CITY: Alexandria
                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                   COUNTRY: United States
                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1737 King
CITY: Alexandria
STATE: Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 HKHKHGHGHGKHKNKGKKNGKHN 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                      22314-2756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRY: United States 22314-2756
                                                                                                                                                                                                                        Virginia
                                                                                                                                                                                                                                                         E: Burns, Doane, Swecker & Mathis, L.L.P. 1737 King Street, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: Burns, Doane, Swecker & Mathis, L.L.P
1737 King Street, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                   LINGWOOD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LINGWOOD, Clifford A. VENTION: HAEMOPHILUS ADHESIN PROTEIN
INFORMATION:
                                  26-JUL-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             31.9%;
43.5%;
                                                                                                                                                                                                                                                                                                                                  HAEMOPHILUS ADHESIN PROTEIN
                                                                                                                                                                                                                                                                                                                                                 Clifford A.
                                                   US/08/686,528P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US/09/456,287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           us 08/686,528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30,427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     032609-001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 56.5;
Pred. No. 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           بــر
• •
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1.
```

```
밁
                            γQ
                                                                                                                                      ; TOPOLOGY: 1:
; MOLECULE TYPE:
US-09-456-287-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δã
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-456-287-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-686-528A-2
                                                            Matches
                                                                                      Query Match
                                                                           Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09456287 Patent No. 6218147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 31.9%;
Best Local Similarity 43.5%;
                                                                                                                                                                                                                                           REGISTRATION NUMBER: 30,4
REFERENCE/DOCKET NUMBER:
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION: APPLICANT: LINGWO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: LINGWOOD, Clifford A.
TITLE OF INVENTION: HAEMOPHILUS ADHESIN PROTEIN
NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 137 НКИДИДИН-ДИКИЕНКИДИЕНИ 158
                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 1737 King CITY: Alexandria
                                                                                                                                                                                                  TYPE:
                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
STRANDEDNESS: single
                          2 HKHKHGHGKGKKNKKKKKKKHK 24
                                                                                                                                                                                                               LENGTH:
                                                                                                                                                                                                                                                                                         NAME:
                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09/456,287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 HKHKHGHGHGKHKNKGKKNGKHN 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH:
НКНДНДН-ДНКНЕНКНДНЕНН 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                            10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22314-2756
                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                         Rea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kea,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E: Burns, Doane, Swecker & Mathis, L.L.P. 1737 King Street, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              337 amino acids
                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                           PatentIn Release #1.0, Version
                                                                                                                                                                    S: single
linear
                                                                                                                                                                                                                                                                                       Teresa Stanek
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Teresa Stanek
                                                                                                                                                                                                             amino acids
                                                                                                                                                   protein
                                                                          31.9%;
43.5%;
                                                                                                                                                                                                                                                                                                                                     US 08/686,528
                                                                                                                                                                                                                                                                        30,427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30,427
                                                                                                                                                                                                                                                           032609-001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            032609-001
                                                                          Score 56.5;
Pred. No. 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 56.5;
Pred. No. 8
                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                        DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                      Length 337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 337;
                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                          μ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ب.
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

RESULT

11

1;

```
; FRAGMENT TYPE: 1; ORIGINAL SOURCE: US-08-594-031-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-594-031-102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-594-031-100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 10
Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 102, Application US/08594031 Patent No. 5783182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 31.9%; Score 56.5; Best Local Similarity 47.6%; Pred. No. 9 Matches 10; Conservative 4; Mismatche
                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/006,838
FILING DATE: 16 NOV-1995
ATTORNEY/AGENT INFORMATION:
NAME: Remenick, James
REGISTRATION NUMBER: 36,902
REFERENCE/DOCKET NUMBER: 0A146-0
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-639-7700
TELEFAX: 202-639-7890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 376 amino acid
COUNTRY: USA
ZIP: 20004-2400
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                   APPLICANT: THOMPSON, TIMOTHY C.
TITLE OF INVENTION: METHOD FOR IDENTIFYING METASTATIC SEQUENCES: 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: THOMPSON, TITLE OF INVENTION: NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HYPOTHETICAL: NAME OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          104 GNGTGSHHN---VDGKHHGWR 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
ZIP: 20004-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 1299 Peni
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/594,031 FILING DATE: 30-JAN-1996
                                                                                                                                STATE:
                                                                                                                                                         CITY: Washington
                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7 GHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100, Application US/08594031
3. 5783182
                                                                                                                            몽
                                                                                                                                                                                                   E: BAKER & BOTTS,
1299 Pennsylvania
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: BAKER & BOTTS, L.L.P.
1299 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    METHOD FOR IDENTIFYING METASTATIC SEQUENCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0A146-0110
                                                                                                                                                                                                   L.L.P.
Avenue,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 1; Length 376;
```

```
US-08-255-457-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; FRAGMENT TYPE: N-terminal; ORIGINAL SOURCE: US-08-594-031-102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application Patent No. 5780040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 31.9%;
Best Local Similarity 47.6%;
Matches 10; Conservative 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: per HYPOTHETICAL: NO ANTI-SENSE: NO
                                     ATTORNEY/AGENT INFORMATION: NAME: Clark, Paul C.
                                                                                                                                    COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Fish & Richardson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY AGENT INFORMATION:
NAME: Remenick, James
REGISTRATION NUMBER: 36,902
REFERENCE/DOCKET NUMBER: 0A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ Version 1.5
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: HELICOBATION: PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Gilbert-Rothstein, Joanne V.
APPLICANT: Wright, Andrew
TITLE OF INVENTION: HELICOBACTER PYLORI NICKEL BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELECOMMUNICATION INFORMATION: TELEPHONE: 202-639-7700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNMBER: 60/006,838
FILING DATE: 16-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Plaut, Andrew G
                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |:| | | :||:||:
104 GNGTGSHHN---VDGKHHGWR 121
                                                                                                                                                                                                                                                   STATE: Massachusetts
COUNTRY: U.S.A.
ZIP: 02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE:
                                                                              CLASSIFICATION: 530
                                                                                              APPLICATION NUMBER: US/08/255,457 FILING DATE:
                                                                                                                                                                                                                                                                                                             CITY: Boston
                                                                                                                                                                                                                                                                                                                               STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: 202-639-77
TELEFAX: 202-639-7890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/0 FILING DATE: 30-JAN-1996
                NAME: Clark, Paul C. REGISTRATION NUMBER: 30,162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
REFERENCE/DOCKET NUMBER: 00398/090001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 GHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08255457
                                                                                                                                                                                                                                                                                                                                 225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               376 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       IBM Compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US/08/594,031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0A146-0110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 56.5;
Pred. No. 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                      Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 1; Length 376;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
```

```
; MOLECULE TYPE: US-09-115-032-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEEX: (61,
TELEEX: 200154
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 60 amino acids
TYPE: amino acid
TYPE: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
US-09-115-032-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 3
The head 9; Conservation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: protein US-08-255-457-1
   Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/09115032 Patent No. 5972348 GENERAL INFORMATION:
                                                                                                                                                           TELEX: 200154
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Clark, Paul C.
REGISTRATION NUMBER: 30,162
REFERENCE/DOCKET NUMBER: 00398/090001
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
TELLEPAX: (617) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Wright, Andrew
TITLE OF INVENTION: HELLCOBACTER PYLORI NICKEL BINDING
TITLE OF INVENTION: PROTEIN
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/255,457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: (617) 542-5070
                                                                                                                              TYPE:
                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U.S.A. ZIP: 02110-2804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STREET: 225 I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10 СИННИНИТИННИУНССЕНИНИН 33
                                                                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GHKHKHGHGHGKHKNKGKKNGKHN 24
                                                                                                             amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Massachusetts
                                                                                                                                            60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plaut, Andrew G.
Gilbert-Rothstein, Joanne V.
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Fish & Richardson
                                                                                                protein
                   31.1%;
37.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31.1%; 37.5%;
                                                                                                                                                                                                                                                                                                                                                                                                  US/09/115,032
   4; Mismatches
                  Score 55; DB 2; Length 60; Pred. No. 2.4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 55; DB 1;
Pred. No. 2.4;
   11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ç,
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
```

Ļ

Search completed: July Job time: 189 sec

6,

2001, 09:10:23

В

10

СНИННИНИТИННИУНССЕНИННИН 33

0

```
QΨ
                                                                                                                 ; TOPOLOGY: linear; MOLECULE TYPE: protein PCT-US95-05772-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 15
PCT-US95-05772-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Qy
                                  Matches
                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application PC/TUS9505772
                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:

NAME: Clark, Paul C.

REGISTRATION UNBER: 30,162

REFERENCE/DOCKET NUMBER: 0039

TELECOMMUNICATION INFORMATION:

TELECHONE: (617) 542-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: HELICOBACTER PYITITLE OF INVENTION: BINDING PROTEIN NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Plaut, Andrew G.
APPLICANT: Gilbert-Rothstein, Joanne V.
APPLICANT: Wright, Andrew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                        TELEFAX: 100154
                                                                                                                                                                                                                                      TELEPHONE: (617) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 225 |
CITY: Boston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A.
ZIP: 02110-2804
                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                    LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10 СИННИНИТНИНКИССЕНИНИН 33
1 GHKHKHGHGHGKHKNKGKKNGKHN 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GHKHKHGHGKHKNKGKKNGKHN 24
                                                                                                                                                                  amino acid
                                                                                                                                                                              60 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      225 Franklin Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Wright, Andrew
                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fish & Richardson
                                                31.1%; 37.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HELICOBACTER PYLORI NICKEL
                                                                                                                                                                                                                                                                                                                                                                                                       PCT/US95/05772
                                                                                                                                                                                                                       <u>.</u>.
                                                                                                                                                                                                                                                                                                       00398/090001
                                  4; Mismatches
                                                Score 55; DB Pred. No. 2.4;
                                                                DB 5;
                                                              Length 60;
                                  Indels
                                 0
                                 Gaps
```

4)

```
Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Minimum DB
Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
 seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               length: 0-
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
July 6, 2001, 09:18:01; Search time 73.59 Seconds (without alignments) 28.983 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BLOSUM62
Gapop 10.0 , Gapext 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-437-912-6
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219241 seqs, 76174552 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pir1:*
pir2:*
pir3:*
pir4:*
KGBOH1
C25486
A25486
C27115
A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219241
                                                 dermal gland prote TATA-binding prote hemolymph antifung hypothetical prote hypothetical prote hypothetical prote diaminopimelate de diaminopimelate de
                                                                                                                                                                                                                                                  kininogen, HMW pre
kininogen, HMW II
kininogen, HMW II
kininogen, HMW IP
K-kininogen, HMW IP
K-kininogen, LMW P
K-kininogen, LMW P
Major acute phase
hypothetical prote
zinc transport pro
glycine/proline-ri
glycine/proline-ri
glycine/proline-ri
female sterile hom
zinc transporter z
hypothetical prote
gene 2C protein -
                 hypothetical prote cold stress protei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                     hypothetical prote
                                                                                                                                                                                                 hypothetical
                                                                                                                                                                                                                    hypothetical
                                                                                                                                                                                               prote
```

45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30
62	62	62.5	62.5	63	63	63	63	. 63.5	63.5	63.5	63.5	64	64	64.5	64.5
35.0	35.0	35.3	35.3	35.6	35.6	35.6	35.6	35.9	35.9	35.9	35.9	36.2	36.2	36.4	36.4
389	189	980	306	735	351	286	208	226	196	196	110	375	207	549	398
N	N	_	N	N	Ľ	N	ĸ	N	Ŋ	N	ν	N	N	N	2
в96635	C81428	S45444	S08607	T45059	KGZQHL	S07193	T08132	T27843	A49987	D85999	T07618	T08134	T08109	T15506	T02681
hypothetical prote	peptidyl-prolyl ci	BEM1 protein-bindi	chorion protein s3	hypothetical prote	histidine-rich gly	chorion protein s3	oleosin-like prote	hypothetical prote	probable fkbP-type	hypothetical prote	<ul> <li>cold stress protei</li> </ul>	oleosin-like prote	oleosin-like prote	hypothetical prote	probable zinc tran

## ALIGNMENTS

		·	
Eur. J. Biochem. 154, 471-478, 1986  A; Title: Completion of the primary structure of human high-molecular-mass kininogen. A; Reference number: A24871; MUID:86108361  A; Recession: A24871  A; Molecule type: protein A; Residues: 'Z', 20-380 <kell> R; Kellermann, J.; Lottspeich, F.; Henschen, A.; Mueller-Esterl, W. in Kinins IV, Greenbaum, L.M., and Margolius, H.S., ed., pp.85-89, Plenum Press, New A; Title: Amino acid sequence of the light chain of human high molecular mass kininoge A; Reference number: A27899  A; Accession: A27899</kell>	A; Accession: 53.44.4  A; Molecule type: mRNA A; Residues: 'ANSM',253-377 < AUE> A; Rolecule type: mRNA A; Residues: 'ANSM',253-377 < AUE> A; Note: differences are due to known cloning artifacts A; Note: differences are due to known cloning artifacts R; Lottspeich, F:; Kellermann, J:; Henschen, A.; Foertsch, B.; Muller-Esterl, W. Eur. J. Biochem. 152, 307-314, 1985 A; Title: The amino acid sequence of the light chain of human high-molecular-mass kini A; Reference number: A91153; MUID:86030270 A; Recession: A91153 A; Molecule type: protein A; Residues: 379-644 < LOT> A; Note: the bradykinin sequence preceding the light chain sequence was not determined R; Kellermann. J: Lottspeich. F: Henschen, A.; Mueller-Esterl. W.	A; Molecule type: mRNA A; Residues: 1-389 < OHX> A; Residues: 1-389 < OHX> A; Residues: 1-389 < OHX> A; Residues: GB: K02566; NID: g177889 A; Takagaki, Y; Kitamura, N; Nakanishi, S. J. Biol. Chem. 260, 8601-8609, 1985 A; Title: Cloning and sequence analysis of cDNAs for human high molecular weight and la; Reference number: A92544; MUID: 85234582 A; Accession: A25276 A; Molecule type: mRNA A; Residues: 1-592, 'I', 594-644 < TAK> A; Cross-references: GB: M11437; NID: g186751; PIDN: AAB59550.1; PID: g386852 R; Auerswald, E.A; Roessler, D.; Mentele, R.; Assfalg-Machleidt, I. FEBS Lett. 321, 93-97, 193-97, 193 A; Title: Cloning, expression and characterization of human kininogen domain 3. A; Reference number: \$32422; MUID: 93223854	RESULT 1  KGHUH1  KGHUH1  Kininogen, HMW precursor [validated] - human  N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen; prokininogen  N;Contains: bradykinin (kallidin I); HMW kininogen I; HMW kininogen II; low molecular  C;Species: Homo sapiens (man)  C;Date: 28-May-1986 #sequence_revision 28-May-1986 #text_change 08-Dec-2000  C;Accession: A01279; A25276; S32422; A91153; A24871; A27899; A27699; A31905; A34030;  C;Accession: A01279; A25276; S32422; A91153; A24871; A27899; A37699; A31905; A34030;  Biochemistry 23, 5691-5697, 1984  Biochemistry 23, 5691-5697, 1984  A;Title: Isolation of a human cDNA for alpha-2-thiol proteinase inhibitor and its ide  A;Reference number: A90490; MUID: 85122621  A;Accession: A01779

```
R.Straczek, J.; Maachi, F.; le Nguyen, D.; Becchi, M.; Heulin, M.H.; Nabet, P.; B FEBS Lett. 373, 207-211, 1995
A.Tille: Purification from human plasma of a tetrapeptide that potentiates insuli A.Reference number: $68059; MUID:96033974
A.Accession: $68059
A.Molecule type: protein
A.Residues: 431-434 <5TR>
A.Residues: 431-434 <5TR>
Biol. Chem. 260, 8610-8617, 1985
A.Title: Structural organization of the human kininogen gene and a model for its A.Reference number: A92545; MUID:85234583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Residues: 381-389 < MAE>
R; Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
R; Sasaguri, M.; Ikeda, M.; Ideishi, M.; Arakawa, K.
Biochem. Biophys. Res. Commun. 150, 511-516, 1988
A; Title: Identification of [hydroxyproline(3)]-lysyl-bradykinin released
A; Title: Tidentification of [hydroxyproline(3)]-lysyl-bradykinin released
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A:Molecule type: protein
A:Residues: 264-359', N',361-375 <LEN2>
R;Little, S.S.; Johnson, D.A.
Biochem. J. 307, 341-346, 1995
A;Title: Human mast cell tryptase isoforms: separation and examination
A:Reference number: S55239; MUID:95251593
A;Accession: S55239
                                                                                                                                                                                                                                    A; Molecule type: protein
A; Residues: 450-452, 'X', 454, 'X', 456 <LIT>
R; Straczek, J.; Maachi, F.; le Nguyen, D.;
FEBS Lett. 373, 207-211, 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: protein

A; Residues: 380-389 <ART3>

R; Lenarcic, B.; Krasovec, M.; Ritonja, A.;

FEBS Lett. 280, 211-215, 1991

A; Title: Inactivation of human cystatin C

A; Reference number: $14303; MUID:91192133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R:Kato, H.: Matsumura, Y.: Maeda, H.
FEBS Lett. 232, 252-254, 1988
A;Title: Isolation and identification of hydroxyproline analogues of bradykinin
A;Reference number: A61495; MUID:88211869
A;Accession: A61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Reference number: A; Accession: S14447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Experimental source: urine A; Note: this peptide had Pro-383 modified A; Accession: C61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: protein
A; Residues: 381-389 < KAT2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Note: this peptide had Pro-383 modified to 4-hydroxyproline A;Accession: B61495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: protein
A; Residues: 380-389 < KAT1>
A; Experimental source: urine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: protein
A; Residues: 1-19;189-192;310-314;381-389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Reference number: A; Accession: S02482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Lenarcic, B.; Gabrijelcic, D.; Rozman, B.; Drobnic-Kosorok, M.; Turk, Biol. Chem. Hoppe-Seyler 389, 257-261, 1988
A;Title: Human cathepsin B and cysteine proteinase inhibitors (CPIs) in A;Reference number: S02482; MUID:89076517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Residues: 379-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: protein A; Residues: 380-389 <SAS>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: A31905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Reference number: A27699; Accession: A27699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Title: A new
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mindroiu, T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9-389,'K',390-407,'Q',409-644 <KEL2>
Carretero, O.A.; Proud, D.; Walz, D.; S
ys. Res. Commun. 152, 519-526, 1988
kinin molety in human plasma kininogens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MUID:88209021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ritonja, A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <LEN1>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of [hydroxyprolyl(3)]bradykinin in ascitic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Olafsson, I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4-hydroxyproline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   kininogen by human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scicli,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Turk,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cathepsin
                                                                                                                                                                                                                                                                                                                                                                                                  of substrate-spec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Þ
                                                                                                                                                                                                                 insulin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            human
                                                                                                                                                                                                                                                                    Bellevi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            in
                                evolut
                                                                                ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            huma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            pla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          flu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ano
```

```
F.1-18/Domain: signal sequence #status experimental (SIGs)
F.19-644/Product: HMW kininogen I (prokininogen) #status experimental <MAT1>
F.19-379,390.644/Product: HMW kininogen II #status experimental <MAT2>
F.19-379/Domain: HMW kininogen heavy chain #status experimental <HCH>
F.19-379/Domain: cystatin homology <CY1>
F.142-253/Domain: cystatin homology <CY2>
F.244-375/Domain: cystatin homology <CY3>
F.380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <HCH>
F.380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <HCH>
F.380-389/Product: lysyl-bradykinin (kallidin II) #status experimental <HCH>
F.381-389/Product: low rolegan light chain #status experimental <HCH>
F.341-510/Region: glycine/histidine/lysine-rich 30-residue repeats
F.341-434/Product: low molecular weight growth promoting factor #status experimental
F.19/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experi
F.28-614,83-94,107-126,142-145,206-218,229-248,264-267,328-340,351-370/Disulfide bond
F.48/Binding site: carbohydrate (Asn) (covalent) #status experimental
F.39-980/Cleavage site: Met-Lys (kallikrein) #status experimental
F.39-990/Cleavage site: Ary-Ser (kallikrein) #status experimental
F.301-33,542,546,557,571,593,688/Binding site: carbohydrate (Carbonydrate (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fed. Proc. 27, 52-57, 1968
A;Title: Structural features of plasma kinins and kininogens.
A;Title: Structural features of plasma kinins and kininogens.
A;Reference number: A9145; MUID:90255622
A;Contents: annotation; bradykinin
C;Comment: The HMW kininogen precursor and the LMW form are produced from the same C;Comment: Kininogen is a cysteine proteinase inhibitor, takes part in initiation c;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilat C;Comment: Bradykinin, released from kininogen prior to the release of bradykinin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokininogen C;Species: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999 C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999 C;Accession: A01282; A01923; A01941; A01938; B09559 R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, (Mature 305, 545-540, 1983) Nature 305, 545-540, 1983
A; Residues: R; Han, Y.N.
                              A;Accession: A91923
A;Molecule type: protein
A;Residues: 376-391 <KAT
                                                                                                                                                                                                                      J. Biochem.
                                                                                                                                                                                                                                                                                              A; Cross-references: GB: V01492;
                                                                                                                                                                                                                                                                                                                         A; Accession: A01282
A; Molecule type: mRNA
A; Residues: 1-619 <KIT>
                                                                                                                                             A; Reference number:
                                                                                                                                                                               A; Title:
                                                                                                                                                                                                                                                R; Kato, H.; Nagasawa,
                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Reference number:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Superfamily: kininogen; cystatin homology
C;Keywords: alternative splicing; blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position:
A; Introns: 65/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KGBOH2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: GDB: KNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                         H.; Nagasawa, S.; Suzuki, T.
em. 67, 313-323, 1970
Studies on the structure of bovine nce number: A91923; MUID:70180420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GHKHKHGHGKGKKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HMW II precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . Similarity
28; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                es: GDB:125256; OMIM:228960
3q27-3q27
102/3; 131/1; 188/3; 224/3;
                                  <KAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                ene for bovine high molecular A93317; MUID:84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bovine
                                                                                                                                                                                                                                                    GB:K01758; NID:g493;
ki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (Ser) (covalent)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 177; r
Pred. No. 2.7
D; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28
                                                                                                                                                                            kininogen:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1,
2.7e-13;
0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    253/1; 310/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T.; Nawa, H.; Nakanishi, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     #status
                                                                                                                                                                                                                                                                                          PIDN:CAA24736.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cysteine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                               cleavages
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    346/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               proteinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              molecular weight kini
                                                                                                                                                                               of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        375/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    potent vasodilator
of bradykinin.
                                                                                                                                                                               disulfide
                                                                                                                                                                                                                                                                                          PID: 9494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

Iwanaga,

s ;

Suzuki,

Η.

```
A:Title: Disulfide bonds in bovine HMW kininogens.
A:Title: Disulfide bonds
A:Reference number: A94300
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
A:Contents: annotation; disulfide bonds
C:Comment: The HMW kininogen precursor is produced from the same gene as the LMW form as
C:Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is impo
C:Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator, if
xyproline residue is present in the kininogen prior to the release of bradykinin.
C:Superfamily: kininogen II the kininogen prior to the release of bradykinin.
C:Superfamily: kininogen II the kininogen prior to the release of bradykinin.
C:Superfamily: kininogen II the kininogen prior to the release of bradykinin contents in the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II the kininogen II th
                                                                                                                                                                                                                                                                                                   F:47/Binding site: carbonyurur.
F:47/Binding site: carbohydrate (Asn) (covalent, status experimental F:136/Binding site: carbohydrate (Thr) (covalent) (partial) #status experimental F:136/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental F:376-377/Cleavage site: Met-Lys (kallikrein) #status experimental F:380/Modified site: 4-hydroxyproline (Pro) #status experimental F:380/Modified site: Arg-Ser (kallikrein) #status experimental F:386-387/Cleavage site: Arg-Ser (kallikrein) #status experimental F:396,400,404,510/Binding site: carbohydrate (Ser) (covalent) #status experimental F:397,398,518,522,534,546,551,568/Binding site: carbohydrate (Thr) (covalent) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        J. Blochem. 79, 1201-
A;Title: Primary stru
A;Reference number: A;Accession: A91941
A;Molecule type: prot
A;Residues: 387-455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Note: 398-rro, ---
R; Han, Y. N.; Komiya, M.; Iwa
R; Han, Y. N.; S5-68, 1975
J. Biochem. 77, 55-68, 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: protein
A;Residues: 'Z',20-104,'E',106-256,'XX',257-376 <SUE>
R;Lottspeich, F.; Kellermann, J.; Henschen, A.; Foertsch,
Eur. J. Biochem. 152, 307-314, 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, J. Biol. Chem. 262, 2768-2779, 1987
A;Title: Bovine high molecular weight kininogen.
A;Reference number: A92627; MUID:87137530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: The amino acid sequence of the light chain of human high-molecular-mass A;Reference number: A91153; MUID:86030270
A;Contents: annotation; bovine cleavage sites; bovine carbohydrate binding sites R;Sueyoshi, T.; Miyata, T.; Kato, H.; Iwanaga, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Title: Studies on the primary structure A; Reference number: A91938; MUID: 75170265
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R; Sueyoshi, T.; Mi
Seikagaku 56, 808,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Molecule type: protein Residues: 456-496 <HA2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Accession: A91938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Accession: B29559
470
                                                                       1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT 28
GHGHKHGHGKHKNKGKNNGKHYDWRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 387-455 <HAN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79, 1201-1222, 1976 mary structure of bo
                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            401-Val, and 455-Lys were also iya, M.; Iwanaga, S.; Suzuki, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bovine cleavage sites;
T.; Kato, H.; Iwanaga,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    primary structure of bovine high-molecular-weight kininogen.
                                                                                                                                                                                                  83.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           of bovine plasma high-molecular-weight kininogen. The MUID: 76260155
                                                                                                                                                    Score 147; DE Pred. No. 7.8e

1; Mismatches
                                                                                                                                                                                              147;
No. 7
                                                                                                                                                                                                                                        DB
                                                                                                                                                                                              8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             н.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The amino acid sequence, positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hayashida, H.; Miyata, T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B.; Muller-Esterl,
                                                                                                                                                        0,:
                                                                                                                                                                                                                                                                                                                                                                                                     (covalent) #status
                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Iwanaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              kinino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
```

RESULT

```
A;Title: Disulfide bonds in bovine HMW kininogens.
A;Reference number: A94300
A;Contents: annotation; disulfide bonds
A;Reference number: A94300
A;Contents: annotation; disulfide bonds
A;Note: article in Japanese
C;Comment: The HMW kininogen precursor is produced from the same gene as the LAW form
C;Comment: The HMW kininogen precursor is produced from the same gene as the LAW form
C;Comment: The HMW kininogen precursor is produced from the kininogen light chain is i
C;Comment: The glycine/histidine/lysine-rich region of HMW kininogen light chain is i
C;Comment: Bradykinin, released from kininogen by kallikrein, is a potent vasodilator
xyprolline residue is present in the kininogen by kallikrein, is a potent vasodilator
xyprolline residue is present in the kininogen prior to the release of bradykinin.
C;Superfamily: kininogen; cystatin homology
C;Keywords: alternative splicing; blood coagulation; cysteine proteinase inhibitor; d
F;1-18/Domain: Signal sequence #status predicted <ANT>
F;19-621/Product: HMW prokininogen I heavy chain #status experimental <HCH>
F;19-39/Product: HMW kininogen I heavy chain #status experimental <HCH>
F;39-388/Product: Lystatin homology <CYI>
F;380-388/Product: Lystatin homology <CYI>
F;380-388/Product: Lystatin homology <CYIP
F;380-388/Product: Lystatin homology <CYIP
F;417-488/Region: glycine/histidine/lysine-rich
F;19-39/Modified site: pyrrolidone carboxylic acid (Gln) (in mature form) #status experimental
F;19-591,82-93,106-125,141-144,205-217,228-247,263-266,327-339,350-369/Disulfide bond
F;380-310ding site: carbohydrate (Asn) (covalent) #status experimental
F;197/Binding site: carbohydrate (Asn) (covalent) (partial) #status experimental
F;380-310dified site: A-hydrovare) (line (Pro) #status experimental
F;380-1640 site: A-hydrovare) (line (Pro) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     R;Han, Y.N.; Komiya, M.; Iwanaga, S.; Suzuki, T.

J; Biochem. 77, 55-68, 1975

A;Title: Studies on the primary structure of bovine high-molecular-weight kininogen. A;Title: Studies on the primary structure of bovine high-molecular-weight kininogen. A;Reference number: A91938; MUID:75170265

A;Reference number: A91938

A;Molecule type: protein
A;Residues: 458-498 c;HAN>
R;Sueyoshi, T.; Miyata, T.; Hashimoto, N.; Kato, H.; Hayashida, H.; Miyata, T.; Iwana
J;Biol. Chem. 262, 2768-2779, 1997

A;Title: Bovine high molecular weight kininogen. The amino acid sequence, positions on A;Reference number: A92627; MUID:87137530

A;Reference number: A92627; MUID:87137530

A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',125-127,'I',129-378 <SUE>
A;Residues: 'Z',20-123, 'I',1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N;Alternate names: alpha-2-thiol proteinase inhibitor; preprokininogen N;Contains: bradykinin (kallidin); kininogen I; kininogen II; prokininogen C;Species: Bos primigenius taurus (cattle) C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 22-Jun-1999 C;Accession: A01281; A91923; A91938; A29559 R;Kitamura, N.; Takagaki, Y.; Furuto, S.; Tanaka, T.; Nawa, H.; Nakanishi, SNature 305, 545-549, 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; McJecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-621 <KIT>
A; Cross-references: GB:V01491; GB:K01757; NID:g491; PIDN:CAA24735.1;
A; Cross-references: GB:V01491; GB:K01757; NID:g491; PIDN:CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Title: Studies on the structure of bovine kininogen: cleavages of disulfide bonds A;Reference number: A91923; MUID:70180420 A;Accession: A91923 A;Molecule type: protein A;Residues: 378.393 <KAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Title: A single gene
A;Reference number: A93
A;Accession: A01281
F;382/Modified site: 4-hydroxyproline (Pro) #status predicted
F;388-389/Cleavage site: Arg-Ser (kallikrein) #status experimenta.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kininogen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ene for bovine high molecular weight and low molecular weight kini
A93317; MUID:84014106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bovine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H.; Miyata, T.; Iwana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PID: 9492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               positions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  kininogen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
```

```
R;Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, T.; Nakanishi, S.
J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution of the rat kininogen gene
A;Reference number: A92625; MUID:87137443
A;Recession: A25486
A;Molecule type: mRNA
A;Residues: 1-639 <KIT>
A;Note: the authors translated the codon CAA for residue 347 as Asn
C;Superfamily: kininogen; cystatin homology
C;Keywords: alternative splicing
F;1-18/Domain: signal sequence #status predicted <SIG>
F;19-33/Domain: cystatin homology <CY1>
F;142-253/Domain: Cystatin homology <CY2>
F;264-375/Domain: cystatin homology <CY3>
                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Species:
C;Date: 08-
 RESULT
                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C;Species: Rattus norvegicus (Norway rat)
C;Date: 08-Mar-1989 #sequence_revision 08-Mar-1989 #text_change 15-Nov-1996
C;Accession: A25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R:Kitagawa, H.; Kitamura, N.; Hayashida, H.; Miyata, T.; Nakanishi, S. J. Biol. Chem. 262, 2190-2198, 1987
A;Title: Differing expression patterns and evolution of the rat kininogen gene family. A;Reference number: A92625; MUID:87137443
A;Accession: C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N; Contains: bradykinin
C; Species: Rattus norve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Comment: The nucleotide sequence was obtained from
C;Superfamily: kininogen; cystatin homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-264 <KIT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             kininogen, HMW I precursor -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Accession: C25486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;399,400,520,524,536,548,553,570/Binding site: carbohydrate (Thr) (covalent) *status F;498-499/Cleavage site: Arg-Thr (kallikrein) *status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 K-kininogen,
                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -kininogen, HMW precursor - rat (fragment)
Species: Rattus norvegicus (Norway rat)
Date: 08-Mar_1989 #sequence_revision 08-Mar-1989 #text_change 30-Sep-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                       492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              117 GHGHGHGRDKHTNKDKNNVKH 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          472 GHGHKHGHGKHKNKGKNNGKHYDWRT 499
                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKHKHGHGKGKKNKGKKNGKH 23
                                                                                           1 GHKHKHGHGHGKHKNKGKKNGKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
6
                                                       GHGHGHGRGRDKHTNKDKNNVKH
                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49.7%;
                                                                                                                                                49.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               rat
                                                                                                                              Score 88; DB
Pred. No. 0.00
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                       514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 88; DB 2;
Pred. No. 0.0026;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 147; DB 1; Pred. No. 7.8e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28
                                                                                                                                                DB 2;
0.0054;
                                                                                                                              8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                    Length 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenBank,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    release
                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ф
                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: MAP1
C;Superfamily: kininogen;
F;19-65/Domain: cystatin |
               A; Reference number:
                                                                                                                                                T48099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-48 < KAG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: preliminary
                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 19; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                              159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                 1 GHKHK-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GHKHK-----
                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19;
```

```
R;Obermaier, B.; Ottenwaelder, B.; Duchemin, D.; submitted to the Protein Sequence Database, Apri
                                                                                               hypothetical protein T20010.200 - Arabidopsis thaliana (Species: Arabidopsis thaliana (mouse-ear cress) C:Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 20-Apr-2000 C:Accession: T48099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R:Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9298-9308, 1987
A:Title: Structure and expression of the genes for major acute phase alpha-1-protein A;Reference number: A92653; MUID:87250580
A;Accession: A27115
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-315 <FUN>
C:Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 major acute phase alpha-1 protein 1 - rat (fragments)
c;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #t
C;Accession: A27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
A; Residues: 1-290 <FUN>
A; Residues: 1-290 <FUN>
R; Kageyama, R.; Kitamura, N.; Ohkubo, H.; Nakanishi, S.
J. Biol. Chem. 262, 2345-2351, 1987
A; Title: Differing utilization of homologous transcription initiation sites A; Reference number: A25488; MUID:87137465
A; Reference number: A25488; MUID:87137465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    K-kininogen, LMW precursor - rat (fragments)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 20-Aug-1999
C;Accession: C27115; A25488
R;Fung, W.P.; Schreiber, G.
J. Biol. Chem. 262, 9299-3308, 1987
A;Title: Structure and expression of the genes for major acute phase alpha-1
A;Reference number: A92653; MUID:87250580
A;Accession: C27115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:J02662; NID:g205071; PIDN:A C;Superfamily: kininogen; cystatin homology F:19-65/Domain: cystatin homology (fragment) <CYS>
A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               135 GHKHKLDDLKQQRDDGYNYRHPMGHGHGHGLGHGYGQGHDHGEGKHTNKDKNNVKH 190
                                                                                                                                                                                                                                                                                                                  GHKHKLDDLKQQRDDGYNYRHPMGHGHGHGLGHGYGQGHDHGEGKHTNKDKNNVKH
T48099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity 33.9
19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                        Z24484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cystatin homology homology (fragment) <CYS>
                                                                                                                                                                                                                                                                                                                                                                                                                                            45.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               45.5%;
                                                                                                                                                                                                                                                                                                                                                                   ·-----GKHKNKGKKNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----HGHGH-----
                                                                                                                                                                                                                                                                                                                                                                                                                 Score 80.5; DB Pred. No. 0.022; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 80.5; DB Pred. No. 0.02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            31-Mar-1989 #text_change 16-Jul-1999
                                              , D.; Zeitler, K.; Mewes, H.W.; Rudd, April 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIDN: AAA41483.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          for major acute phase alpha-1-protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                    4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -GKHKNKGKKNGKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 315;
                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          290;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PID:g205072
                                                                                                                                                                                                                                                                                                                                                                                                                    33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33;
                                                                                                                                                                                                                                                                                                                  214
                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0f
                                                                                                                                                                                                                                                                                                                                                                                                                    2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2
```

Дb

140 GHGYGYGHGHGKFKHGKHGKFKHGKH 165

```
glycine/proline-rich protein GPRP - Arabidopsis thaliana
c;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 28-Oct.1996 #sequence_revision 27-Feb-1997 #text_change 21-Jul-2000
C;Accession: S65780
                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
S65780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R; Palmiter, R.D.; Findley, S.D.
EMBO J. 14, 639-649, 1995
A; Title: Cloning and functional characterization
A; Reference number: S54302; MUID:95188868
A; Accession: S54303
A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-199 < OBE>
A;Cross-references: EMBL:AL163816
A;Experimental source: cultivar Columbia; BAC clone T20010
C;Genetics:
                                                                                                                                                                                 A;Molecule type: DNA
A;Residues: 1-177 <MAR>
A;Cross-references: EMBL:X84315;
A;Note: mRNA was also sequenced
                                                                                                                                                                                                                                                    R;Marty, I.; Monfort, A.; Stiefel, V.; Ludevid, Plant Mol. Biol. 30, 625-636, 1996
A;Title: Molecular characterization of the gene A;Reference number: S65780; MUID:96189273
A;Accession: S65780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Molecule type: mRNA
A;Residues: 1-507 <PAL>
A;Cross-references: EMBL:U17133; NID:g577842; PIDN:AAA79234.1; PID:g577843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N;Alternate names: zinc transporter ZnT-1
C;Species: Rattus norvegicus (Norway rat)
C;Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change
C;Accession: S54303
                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                    A; Gene: GPRP
A; Introns: 99/1
                                                                                                                                                                    A; Note: mRNA was C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            zinc transport
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Note: T20010.200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Map position: 3
A; Introns: 163/2
                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GHKHKHGHGHGKHKNKG-KKNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GHKHKHGHGHGKH---KNKGKKNGKHNG 25
GHKHKHGHGHG--KHKNKGK-KNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GHGHSHGHG-HLAKGARKAGRAGG 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GHGHGHGHRRHGRDHRHGRDRGHHRG 124
                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein ZnT-1 - rat
                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42.18;
                                                                   41.0%;
57.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41.2%;
57.7%;
                                                                                                                                                                                                    NID: g886425; PIDN: CAA59059.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                   Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2
                                                                 Score 72.5; DB Pred. No. 0.11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 73; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 74.5; DB Pred. No. 0.074; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25
                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 2
0.24;
                                                                                   DB
                                                                                                                                                                                                                                                                                     coding
                                                                                                                                                                                                                                                                                                                     D.; Delseny, M.; Puigdomenech,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of a
                                                                                   ۷,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ب</u>
                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 507;
                                                                                 Length 177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 199;
                                                                                                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                     GPRP, a class of proteins ri
                                                                                                                                                                                                    PID:g1465364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       zinc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-Nov-1999
                                                 ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      transporter that
                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.
                                                                                                                                                                                                                                                                                                                       ۳.
               ğ
```

```
A;Gene: fsh
A;Cross references: FlyBase:FBgn0004656
A;Cross references: FlyBase:FBgn0004656
C;Superfamily: unassigned bromodomain proteins; bromodomain homology
C;Superfamily: unassigned bromodomain proteins; bromodomain homology
C;Keywords: alternative splicing; transmembrane protein
F;1-2038/Product: female sterile homeotic protein, 205K #status pred:
F;1-1106/Product: female sterile homeotic protein, 110K #status pred:
F;59-116/Domain: bromodomain homology <BRO1>
F;59-116/Domain: bromodomain homology <BRO1>
F;59-116/Domain: bromodomain homology <BRO1>
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;59-116/Domain: bromodomain homology 
F;5
                                                                                                                                                                                                                                                                                                                                                                                                              A: Molecule type: mRNA
A: Residues: 1-1106 <HA2>
A: Cross references: EMBL: M23222
C: Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references: A; Accession: B43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R;Haynes, S.R.; Mozer, B.A.; Bhatia-Dey, N.; Dawid, I.B. Dev. Biol. 134, 246-257, 1989
A;Title: The Drosophila fsh locus, a maternal effect hom
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N;Alternate names: membrane protein fsh, 205K
N;Contains: female sterile homeotic protein, 110K
C;Species: Drosophila melanogaster
C;Date: 03-Mar-1993 #sequence_revision 03-Mar-1993 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  glycine/proline-rich protein - Arabidopsis thaliana
N;Alternate names: protein K10A8_130
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 18-Aug-2000 #sequence_revision 18-Aug-2000 #text_change 18-Aug-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: mRNA
A; Residues: 1-2038 <HAY>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: A; Accession: A43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C; Accession: A43742; B43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Map position: 5
A; Introns: 97/1
A; Note: K10A8_130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Accession: T51469
R;Sato, S.; Nakamura, Y.; Kaneko,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A43742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-173 <SAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: A; Accession: T51469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          submitted to the Protein
                                                                                                                                                        F;503-560/Domain: bromodomain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross-references:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   female sterile homeotic protein,
                           Query Match
Best Local Similarity
   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  128 GHHHGHGYGYGYHGHGKFKHGKFKHGKFGKHGMFGKHKGKFFKKWK 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GHKHKHG-----HGHGKHKNKGKKN------GKHNG-----WK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hila fsh locus, a maternal effect homeotic A43742; MUID:89276730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL:AL391151 ce: cultivar Columbia; BAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL: M23221; NID: g157452; PIDN: AAA28540.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40.4%;
                              40.1%;
                                                                                                                                                           homology
                              Score 71;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  205K - fruit
ein fsh, 205K
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T.; Kato,
Database,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 71.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
   Mismatches
                                                                                                                                                                  <BR02>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       T.; Asamizu, E.;
August 2000
                                                                DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB
).15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             fly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           clone
   11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                            Length 2038;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K10A8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 173;
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kotani, H.; Tabata,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   melanogaster)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PID:g157453
                                                                                                                                                                                                                        predicted predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19;
   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encodes apparent
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                           <MAT>
                                                                                                                                                                                                                                                             <MA2>
   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
```

1 GHKHKHGHGHGKHKNKGKKNGKHNGW

g

597 GHGHGHGHGHGHGHGHGHGHGY 622

```
gene 2C protein - slime mold (Dictyostelium discoideum)
C;Species: Dictyostelium discoideum
C;Species: Dictyostelium discoideum
C;Date: 07-Sep-1990 #sequence_revision 07-Sep-1990 #text_change 29-Oct-1999
C;Accession: S08137
R;Ramji, D.P.; Richards, A.J.; Jagger, P.; Bleasby, A.; Hames, B.D.
Mol. Microbiol. 4, 129-135, 1990
A;Title: Two cyclic AMP-regulated genes from Dictyostelium discoideum encode homologous
A;Reference number: S08136; MUID:90205618
A;Accession: S08137
A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: DNA
A;Residues: 1-515 <WIL>
A;Cross-references: EMBL:299942; PIDN:CAB17070.1; GSPDB:GN00028; CESP:H13N06.5
A;Experimental source: clone H13N06
                                                                                                                                                                                                                                                                                                        DЬ
                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Map position: X
A; Introns: 118/1; 156/2; 182/2; 306/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         submitted to the EMBL Data Library, October 1997 A; Reference number: Z19673 A; Accession: T23089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hypothetical protein H13N06.5 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Decies: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 18-Feb-2000 C;Accession: T23089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Cloning and functional characterization of a mammalian zinc transporter that A;Reference number: S54302; MUID:95188868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      zinc transporter ZnT-1 - mouse
C:Species: Mus musculus (house mouse)
C:Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change 05-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         R; Lennard,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 T23089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Introns: 203/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-503 <PAL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:U17132; NID:g577840; PIDN:AAA79233.1; PID:g577841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genetics:
Gene: CESP:H13N06.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession: S54302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                   276 GHSHSHGHSHG---GGGHSHGAHDMSVGGW 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              145 GHGHSHGHG-HLAKGARKAGRAG 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
nes 13; Conserv
                                                                                                                                                                                                                                                                                                                            1 GHKHKHGHGHGKHKNKGKKNGKHN----GW 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GHKHKHGHGHGKHKNKGKKNGKHNG 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         z
                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                           39.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               39.3%;
                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                                                                                                                                                                                                                                                                                                                                                           Score 69.5; DB Pred. No. 0.62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 69.5; DB Pred. No. 0.61;
                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               DB
                                                                                                                                                                                                                                                                                                                                                                                                                               2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2;
                                                                                                                                                                                                                                                                                                                                                                                     . 80
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 503;
                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                     2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
```

```
A;Residues: 1-98 <RAM>
A;Residues: 1-98 <RAM>
A;Cross-references: EMBL:X16827; NID:g7161; PIDN:CAA34727.1; PID:g7162
C;Genetics:
A;Gene: 2C
   DЬ
                     Ωy
                                           Matches
                                                      Query Match
Best Local
74 HNHGHGNGHGPHGHGGKGSG 93
             11;
                                                        Similarity
                                           Conservative
                                                       39.0%;
55.0%;
                      21
                                                       Score 69; DB 2
Pred. No. 0.18;
                                           Mismatches
                                                                 2
                                           6;
                                                               Length 98
                                           Indels
                                           0;
                                           Gaps
                                           0;
```

Search completed: July Job time: 647 sec

6, 2001, 09:18:01

GenCore version Copyright (c) 1993 - 2000

Compugen Ltd

```
Minimum DB s
Maximum DB s
                                                                                                                                                                                                                            Result
No.
                                                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                   Title:
Perfect score:
                                                                                                                                                                                                                                                                                      Database
                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                    Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein -
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
58.55
                                                                                                                                                                                                                                                                                                                            seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                protein search, using
                                                                                                                                                                                                                                                                                                                            length: 0
length: 2000000000
BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                   July
                                                                                                                                                                                                                                                                                     SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                            93435 seqs,
                                                                                                                                                                                                                                                                                                                                                                                             1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                                                                                                                                    US-09-437-912-6
177
                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                    6, 2001, 09:26:38; search time 37.59 seconds (without alignments) 25.516 Million cell updates/sec
DB
                                                                                                                                                                                                                                                                                                                                                            34255486 residues
                                                                                                                                                                                                                                                                                                                                                                         Gapext 0.5
                                                                                          T2D2_DROME
ANTF_SARPE
DCDA_ECOLI
YP62_CAEEL
SLYD_ECOLI
      IFH1_YEAST
HUNB_DROMM
HUNB_DROSO
KE4_HUMAN
YOHM_ECOLI
DCDA_STRCO
UDPE_NPVSL
                                                   S109_RABIT
DCDA_BUCAI
                                                                CH38_DROME
BOB1_YEAST
                                                                             CH36_DROME
HRPX_PLALO
                                                                                                                          VG50_HSVI1
SKGR_XENLA
                                                                                                                                                           KE4_BRARE
ZNT1_MOUSE
                                                                                                                                                                             KNG_RAT
ZNT1_RAT
                                                                                                                                                                                          KNG_HUMAN
KNH2_BOVIN
KNH1_BOVIN
KNG_MOUSE
                                                                                                                                                                      FSH_DROME
MBP_CHICK
                                                                                                                                       CAUP_DROME
                                                                                                                                                     KE4L_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                sw model
                                                                                                                                               DICDI
                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                             28
                                                                                                                                                                                                                                                                                                                                                93435
                                                                                                Q24325
Q08617
Q0861
P00861
Q09437
      P30856
P30856
P04929
P04929
P07183
P3750117
P575113
P39520
O46248
Q92548
Q92548
Q92548
                                                                                                                          P54269
Q00130
P13673
                                                                                                                                             Q9pub8
Q60738
Q9xtq7
P15648
                                                                                                                                                                       P08934
Q62720
P13709
                                                                                                                                                                                          P01042
P01045
P01044
O08677
                                                                                                                                                                                                                           Description
           ) saccharomyc
drosophila
drosophila
homo sapien
secherichia
streptomyce
                                                                     5 drosophila
7 sarcophaga
7 sarcophaga
7 escherichia
7 caenorhabdi
6 escherichia
6 drosophila
9 plasmodium
9 plasmodium
                                                   saccharomyc
oryctolagus
buchnera ap
                                                                                                                                       dictyosteli
drosophila
                                                                                                                           ictalurid h
xenopus lae
                                                                                                                                                           brachydanio
mus musculu
       spodoptera
                                                                                                                                                                             rattus norv
                                                                                                                                                                        drosophila
                                                                                                                                                                                           mus musculu
                                                                                                                                                                                                 bos taurus
bos taurus
                                                                                                                                                                                                              homo sapien
```

DISULFIDE BONDS.
Sueyoshi T., Miyata T., Kato H., Iwanaga S.;
"Disulfide bonds in bovine HMW kininogens.";

R R	RP	RI RI	R R	R R	R	꼽 꼽	RA	RX	R	P 집	RI RA	RX P	<sub>공</sub> 2	3 73 5	RA RA	R R	R R	RT	꼽 꼽	RX RA	R ?	RR	28	200	E DE	B	7 7 7	A U K	RES									
																													ULT		4 4	3 2	41	39 40	38	36	3 5 4	
Sueyoshi T.	[6] DISULFIDE BONDS.	"Structural Fed. Proc.	<pre>Pierce J.V.;</pre>	[5] SEQUENCE OF 381-389.	Eur. J. Biochem.	"The amino acid	<pre>Lottspeich F., Kellermann J., Henschen A., Foertsch B., Mueller-Esterl W.;</pre>	SEQUENCE OF 379-644. MEDLINE-86030270; PubMed=4054110;	[4]	its identity with low molecular weight kininogen."; Biochemistry 23.5691-5697/1984)	Ohkubo I., Kurachi K., Takasawa T., Shiokawa H., "Isolation of a human cDNA for alpha 2-thiol pro	SEQUENCE OF 1-401 FROM N.A. MEDLINE=85122621; PubMed=6441591;	J. Biol. Chem. 260:86	"Structural org	Kitamura N., Kitagawa H., Fukus Nakanishi S.:	GENE STRUCTURE. MEDLINE=85234583; PubMed=2989294;	J. Biol. Chem. 260:8601-	two human prekininogens.";	"Cloning and sequence analysis weight and low molecular weight	<pre>MEDLINE=85234582; PubMed=2989293; Takagaki Y., Kitamura N., Nakanishi S.;</pre>	TISSUE=Liver;	CEOTIENCE EDON N P /TCOEODNC HMW AND T.MW	Mammalia; Eutheria; Primatės; Catarrhini; Hominidae; Homo	Ano. Homo sapiens (Human). Eukarvota: Metazoa: Chordata: Craniata: Vertebrata:	BRADYKININ].	01-OCT-2000 (Rel. 40, Last annotation update) KININOGEN PRECURSOR (ALPHA-2-THIOL PROTEINASE INHIBITOR)	21-JUL-1986 (Rel. 01, Created) 01-FEB-1996 (Rel. 33, Last sequence		8	ALIGNMENTS	5 56 31.6 645 1 CNG3_CHICK	3 56.5 31	1 57 32.2 476 1 KE4_MOUSE	9 58 32.8 657 1 KNOB_PLAFN 0 57 32.2 449 1 CSUP_DROME	8 58 32.8 634 1 KNOB_PLAFG	6 58 32.8 277 1 KNOB_PLAFD 7 58 32.8 473 1 KNOB BLAFA	4 58.5 33.1 212 1 SLYD_AERHY 5 58 32 8 155 1 KE4 DTG	
						molecul					hibitor			model	a T.,			!	cuctures					ostomi;	·	[CONTAINS					0 0	$\sim$	, 0,	** 0	01.	~ w ·	וטוכ	
						ar-			٠		and			for					of							 					us gall	actinobacil	nusculu	modium ophila	nodium	nodium	monas h	

```
HHW-KININGGEN KININGGEN SARE INHIBITORS OF THIOL PROTEASES; (2)

HHW-KININGGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY

HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO

FACTOR XII; (3) HHW-KININGGEN INHIBITS THE THROMBIN-AND PLASMIN-
INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPTIDE

BRADYKININ THAT IS RELEASED FROM HMW-KININGGEN SHOWS A VARIETY OF

PHYSIOLOGICAL EFFECTS; (4A) INFLUENCE IN SMOOTH MUSCLE

CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND

DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A

MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR

PENNEABLIITY, (4E2) STINULATION OF NOCICEPTORS (4E3) RELEASE OF

OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTRAGANDINS), (4F) IT HAS

A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION,
INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR ACTION); (5)

LMM-KININGGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMM-

KININGGEN IS IN CONTRAST TO HMW-KININGEN NOT INVOLVED IN BLOOD

CLOTTING.
                                                                                                                                             PIR; A01279; KQ
PIR; A25276; A3
PIR; A01280; KQ
PIR; B25276; B3
PIR; S02482; SQ
SWISS-2DPAGE; I
MIM; 228960; -
           CHAIN
                                                                                                                                                                                                                                EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restructe by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL;
EMBL;
EMBL;
EMBL;
                                    SIGNAL
                                                                      Glycoprotein;
                                                                              Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININGEN.
PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- FUNCTION:
                                             Alternative
                                                                                                                      InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                  [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: SECRETED.
ALTERNATIVE PRODUCTS: 2 ISOFORMS;
PRODUCED BY ALTERNATIVE SPLICING.
TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PTM: BRADYKININ IS RELEASED FROM KININOGEN SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAIN
                                                                                                                                                                                                                               M11526
M11527
M11527
M11437
M11438
M11521
M11523
M11523
M11524
M11524
M11526
M11526
                                                                                                                                                                                                                                                                                                                                                                                        M11438;
M11521;
M11522;
M11523;
M11524;
M11525;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                K02566;
M11437;
                                                       n; Plasma; Repeat; 'Blood coagulation;
                                                                                                                                                                     ; KGHUL1.
; B25276.
; S02482.
                                                                                                                                                                                                        ; KGHUH1.
A25276.
                                              splicing
                                                                                                                                                                                                                                                                                         AAB59550.1
AAB59550.1
AAB59550.1
AAB59551.1
AAB59551.1
AAB59551.1
AAB59551.1
AAB59551.1
                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB59550.1;
AAB59550.1;
AAB59550.1;
                                                                                                                                                          P01043; HUMAN
                                                                                                                                                                                                                                              AAB59551
                                                                                                                                                                                                                                                                                                                                                                                                                AAB59550.1;
AAB59550.1;
                                                                                                                                                                                                                                  AAB59551
                                                                                                                                                                                                                                                                      AAB59551
                                                                                                                                                                                                                                                                                                                                                                                         AAB59550
                                                                                                                                                                                                                                                                                                                                                                                                      AAB59550.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA35497.1;
18
644
380
389
                                                                                                                                                                                                                                                       JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
                                                                                                                                                                                                                                                                                                                                                   JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
JOINED
           KININOGEN HEAVY CHAIN
BRADYKININ
                                                       Thiol protease inhibitor; Vasodilator; Inflammatory response; Signal;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MMH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SHOWN HERE) AND LMW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLASMA KALLIKREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 no restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       no
no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      way
```

```
밁
                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                         Matches
                                                                                                                                                                  _BOVIN
                                                                                                                                                                                                                                                           VARSPLIC
CONFLICT
SEQUENCE
SEQUENCE OF 19-376.
MEDLINE-87137530; PubMed=3546295;
Sueyoshi T., Miyata T., Hashimoto
                                                                                                                                                                                                                                                                                                                   CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                               DISULFID
                     "A single gene for bovine weight kininogens.";
Nature 305:545-549(1983).
                                                                                   Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Cetartioda Bovidae; Bovinae; Bos.
                                                                                                                              21-JUL-1986 (Rel. 01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOD_RES
DISULFID
                                                 Kitamura N.,
                                                      SEQUENCE FROM N.A.
MEDLINE=84014106; PubMed=6571699;
                                                                            NCBI_TaxID=9913;
                                                                                                          Bos taurus (Bovine)
                                                                                                                BRADYKININ]
                                                                                                                       KININOGEN, HMW
                                                                                                                                            P01045;
21-JUL-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHAIN
DOMAIN
                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                           DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                 DISULFID
                                                                                                                                                          KNH2_BOVIN
                                                                                                                                                                                                                                                                                        VARSPLIC
                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                              DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                            DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                             494 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                                                                    1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                                                                                         28; Conser
                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                  Takagaki Y.,
                                                                                                                       II
                                                                                                                                                          STANDARD;
                                                                                                                             01, Created)
01, Last sequence update)
40, Last annotation updat
                                                                                                                       PRECURSOR
                                         bovine
                                                                                                                                                                                                                                                           644
593
71945
                                                                                                                                                                                                                                                                                       Cetartiodactyla;
                                                                                                                                                                                                                               100.0%;
Hashimoto N.,
                                                                                                                                                                                                                                        08
                                         Furuto S., Tanaka T., high molecular weight
                                                                                                                                                                                                                                                           ₩.
                                                                                                                       annotation update)
(THIOL PROTEINASE
                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
HIS-RICH (ASSOCIATED W
                                                                                                                                                                                                                                                          MISSING (IN ISOFORM LAW).
T -> I (IN REF. 1).
; 3132B4CBAF8FBB7E CRC64;
                                                                                                                                                                                                                                                                                                                                                            N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                VSPPHTSMAPAQDEERDSGKEQGHTR ->
PPKAGAEPASEREVS (IN ISOFORM LI
                                                                                                                                                                                                                                                                                                                                                                                   N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                  PYRROLIDONE CARBOXYLIC INTERCHAIN.
                                                                                                  Craniata; Vertebrata;
                                                                                                                                                          PRT;
                                                                                                                                                                                                                               Score 177; DB 1
Pred. No. 1e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTIVITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KININOGEN LIGHT
                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                             521
                                                                                                                                                                                                          28
                                                                                           Ruminantia; Pecora;
                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                            (GLCNAC.
(GLCNAC.
(GLCNAC.
Kato H.,
                                                                                                                                                          Ã
                                                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHAIN
                                                                                                                      INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                         0;
Hayashida
                                         and
                                               Nawa H., Nakanishi S.;
                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                         LMW)
                                                                                                                                                                                                                                                                                ISOFORM LMW)
                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WITH CLOTTING
                                                                                                                                                                                                                                                                                                                                                                    (POTENTIAL). (POTENTIAL).
                                         low molecular
                                                                                                  Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACID.
                                                                                                                                                                                                                                       644;
Ξ
                                                                                           Bovoidea;
                                                                                                                                                                                                                                                                                        SHLRSCEYKGR
                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                        0;
```

Iwanaga S.;

```
EMBL; V01492; CAA24736.1; EMBL; V01492; CAA24737.1; FPIR; A01282; KGBOH2.
PIR; B29559; B29559.
HSSP; P04129; 1AFI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J. Biol.
            InterPro; IPR000010; ...
InterPro; IPR002395; ...
Pfam; PF00031; cystatin; 3.
PRINTS; PR000314; KININOGEN.
PROSITE; PS00287; CYSTATIN; 2.
Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation; Signal;
                                                                                                                                                                                                                                                                modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Studies on the primary structure of bovine high-molecular-we kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
-I- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 387-455.
MEDLINE=76260155; PubMed=956151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen: cleavages of disulfide
bonds and of methionyl bonds in kininogen-II.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 456-496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Primary structure of bovine plasma high-molecular-weight kininogen. The amino acid sequence of a glycopeptide portion (fragment 1) following the C-terminus of the bradykinin moiety.";

"", Blochem. 79:1201-1222(1976).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          chain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            positions of carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=75170265;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=70180420;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovine high molecular weight kininogen. The amino acid sequence, positions of carbohydrate chains and disulfide bridges in the hea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Biochem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTION).
SUBCELLULAR LOCATION: EXTRACELLULAR.
SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HMW II AND LAW II KININOGEN PRECURSORS PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2) HMW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO FACTOR XII; (3) HMW-KININOGEN INHIBITS THE THROMBIN- AND
                                                                                                                                                                                                                                                                                                                                                                                                                    PTM: BRADYKININ IS RELEASED FROM KININOGEN BY PLASMA KALLIKREIN. SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLASMIN-INDUCED AGGREGATION OF THROMBOCYTES; (4) THE ACTIVE PEPETOE BRADYKININ THAT IS RELEASED FROM HAW-KININGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4EI) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARBIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Y.N., Komiya M., Iwanaga S., Suzuki T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE SPECIFICITY: PLASMA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TO RESIDUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            portion."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  376-391.
response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          262:2768-2779(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=1169237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PubMed=4986212;
                                                                                                                                                                                                        ALT_SEQ.
                                                                                                                                                                                                                                                                                    (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                    There are no rest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             high-molecular-weight
                                                                                                                                                                                                                                                                                                      Usage
                                                                                                                                                                                                                                                                                                        bу
                                                                                                                                                                                                                                                                                                                                            restrictions
                                                                                                                                                                                                                                                                                                          and
                                                                                                                                                                                                                                                                                                                                                          EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the heavy
                                                                                                                                                                                                                                                                                                                            st.
                                                                                                                                                                                                                                                                                                                                                                a collaboration - MBL outstation
                                                                                                                                                                                                                                                                                                        for
                                                                                                                                                                                                                                                                                                                          'n
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                        way
```

```
DЬ
                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 23; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PEPTIDE
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                     Sueyoshi T., Miyata T., Hashimoto N., Kato H.
Miyata T., Iwanaga S.;
"Bovine high molecular weight kininogen. The
positions of carbohydrate chains and disulfid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHAIN
SEQUENCE OF 378-393
MEDLINE=70180420; PI
                                                                                              weight kininogens.";
Nature 305:545-549(1983).
                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eute
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora;
                                                                                                                                                                                                           21-JUL-1986 (Rel. 01-JUN-1994 (Rel.
                                                                                                                                                                                                                            P01044;
21-JUL-1986
                                                                                                                                                                                                                                                    BOVIN
                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                        J. Biol.
                                                                     MEDLINE-87137530;
                                                                              SEQUENCE OF 19-378.
                                                                                                                    Kitamura N., Takagaki Y.,
                                                                                                                             MEDLINE=84014106; PubMed=6571699;
                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                    NCBI_TaxID=9913;
                                                                                                                                                             Bovidae;
                                                                                                                                                                                    Bos taurus
                                                                                                                                                                                              BRADYKININ]
                                                                                                                                                                                                    KININOGEN, HMW I PRECURSOR
                                                                                                                                                                                                                                            KNH1_BOVIN
                                                                                                                                                                                                                                                                                                                                                                         VARIANT
                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                         DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                                                                                              *A single gene for bovine
                                                                                                                                                                                                                                                                                   470
                                                                                                                                                                                                                                                                                                  1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                                                                                                                                                   GHGHKHGHGKHKNKGKNNGKHYDWRT
                                                                                                                                                             Bovinae;
                         Chem.
                                                                                                                                                                                    (Bovine).
                                                                                                                                                                                                                                                                                                                                                          619
                                                                                                                                                                                                                                                                                                                                                                  136
257
19
87
136
1168
1168
1197
2204
2204
2204
200
207
27
82
1066
1141
1205
82
1066
1141
1325
82
8338
8338
8338
8338
                                                                                                                                                                                                                            (Rel.
                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                          ΑĀ,
                        262:2768-2779(1987)
                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                             Bos.
                                                                       PubMed=3546295;
                                                                                                                                                                                                             01,
01,
29,
PubMed=4986212;
                                                                                                                                                                                                                                                                                                                                                                  19
87
1366
1197
2004
2004
2004
2004
2009
93
1125
217
2217
2217
2217
2337
2367
337
337
                                                                                                                                                                                                                                                                                                                                                          68710
                                                                                                                                                                                                                                                                                                                         83.1%;
82.1%;
                                                                                                                                                                                                   Last sequence update)
Last annotation update)
JRSOR (THIOL PROTEINASE INHIBITOR) [CONTAINS:
                                                                                                                                                                                                                            Created)
                                                                                                            Furuto S., Tanaka T., high molecular weight
                                                                                                                                                                                                                                                                                                                                                          MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYSTATIN-LIKE CYSTATIN-LIKE CYSTATIN-LIKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PARTIAL.
OR 169.
                                                                                                                                                                                                                                                                                                                         Score 147; DB 1;
Pred. No. 4.7e-11;
                                                                                                                                                                                                                                                                                                                                                                  HFH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-LINKED (GLCNAC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PYRROLIDONE CARBOXYLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIGHT CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KININOGEN,
                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                  ' ' '
                                                                                                                                                                                                                                                                                                                                                          F04320A8EB0EE0DA CRC64;
                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                   497
                                                                                                                                                                                                                                                                                                  28
                                                                                                                                                                                                                                                                                                                                                                   ⊼ < Ⴊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHAIN
                                       disulfide bridges in
                                                               Kato H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MMH
                                                                                                                                                                                                                                            Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               II.
                                               amino acid sequence,
                                                               Hayashida
                                                                                                              Nawa
and
                                                                                                                                                                                                                                                                                                                                 Length 619;
                                                                                                          low
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (PARTIAL).
                                                                                                                                                                             Euteleostomi;
                                                                                                                    Nakanishi
                                                                                                                                                                     Bovoidea
                                       the heavy
                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                     s:
                                                                                                                                                                                                                                                                                                                  0
```

```
CARBOHYD
CARBOHYD
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                      MOD_RES
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outset the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00031; cystatin; 3. PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Han Y.N., Komiya M., Iwanaga S., Suzuki T.;
"Studies on the primary structure of bovine high-molecular-weight kininogen. Amino acid sequence of a fragment ('histidine-rich peptide') released by plasma kallikrein.";
J. Biochem. 77:55-68(1975).
-!- FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; ('
                                                                                                                                                                                                                                                                                                                                                          PEPTIDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Glycoprotein; Plasma; Duplication; Vasodilator; Alternative splicing; Thiol protease inhibitor; Bradykinin; Blood coagulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR; A01281; KGBOH1.
PIR; A29559; A29559.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -!- TISSUE SPECIFICITY: PLASMA.
-!- PTM: BRADYKININ IS RELEASED FROM KININGGEN BY PLASMA KALLIKREIN
-!- SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000010; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; V01491; CAA24735.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-75170265; PubMed-1169237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 458-498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kato H., Nagasawa S., Suzuki T.;
"Studies on the structure of bovine kininogen: cleavages of disulfide bonds and of methionyl bonds in kininogen-II.";
J. Biochem. 67:313-323(1970).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUBCELLULAR LOCATION: EXTRACELLULAR.
ALTERNATIVE PRODUCTS: HMW I AND LMW I KININOGEN PRECURSORS ARE
PRODUCED FROM THE SAME GENE AS THE RESULT OF ALTERNATE MRNA
SPLICING. THE SEQUENCES OF BOTH KININOGENS ARE IDENTICAL UP
TO RESIDUE 400.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TO FACTOR XII; (3) HAW-KININGEN INHIBITS THE THROMEIN-AND FLASMIN-INDUCED AGGREGATION OF THROMBOUTES; (4) THE ACTIVE PLASMIN-INDUCED AGGREGATION OF THROMBOUTES; (4) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HAW-KININOGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA ENDOTHELIUM-DERIVED RELAXING FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIJOCHEM. //:35'06(15'7).

FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES HAW-KININOGEN PLAYS AN IMPORTANT ROLE IN BLOOD COACULATION HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI TO PARTING XIII. (3) HMW-KININOGEN INHIBITS THE THROMBIN-AND PARTINOGEN PARTINOGEN INHIBITS THE THROMBIN-AND PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTINOGEN PARTIN
  19
19
389
389
389
19
136
258
258
258
2197
136
168
197
204
204
106
                                                                                                                                                                                                                                                                                                                                                                                                                                                           response;
  621
378
388
621
135
257
257
378
19
19
136
1168
197
204
591
125
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Signal
                                                                                                                                                                                                                   LIGHT CHAIN.

CYSTATIN-LIKE 1.

CYSTATIN-LIKE 2.

CYSTATIN-LIKE 3.

CYSTATIN-LIKE 3.

PYRROLLDONE CARBOXYLIC A
                                                                           N-LINKED (GLCNAC. . .) (PARTIAL)
N-LINKED (GLCNAC. . .).
INTERCHAIN.
                                                                                                                                                                            PARTIAL.
                                                                                                                                                                                                      N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                          BRADYKININ
                                                                                                                                                                                                                                                                                                                                                                                                    KININOGEN,
                                                                                                                                                                                                                                                                                                                                                                                  HEAVY CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                   PROBABLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                         HMW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COAGULATION BY
                                                                                                                                                                                                                             ACID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROTEASES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  way
```

```
RESULT 4
KNG_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                             FACTOR XII; (3) HWA-KININGEN INHEBITS THE THROMEIN AND FRANKIN FACTOR XII; (3) HWA-KININGEN INHEBITS THE THROMEIN-AND PLASMIN-INDUCED AGGREGATION OF THROMENS (44) THE ACTIVE PEPTIDE BRADYKININ THAT IS RELEASED FROM HWW-KININGEN SHOWS A VARIETY OF PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIBRESIS AND DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A MEDIATOR OF INFLAMMATION AND CAUSES (4E1) INCREASE IN VASCULAR PERMEABILITY, (4E2) STIMULATION OF NOCICEPTORS (4E3) RELEASE OF OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION, INDIRECTLY VIA BRADYKININ ACTION, A CARDIOPROTECTIVE EFFECT (DIRECTLY VIA BRADYKININ ACTION), (5) LAW-KININGEN IS IN CONTRAST TO HAW-KININGEN NOT INVOLVED IN BLOOD CLOTTING (BY SIMILARITY).

-I. SUBGELLULAR LOCATION: SECRETED.
-I. ALTERNATIVE PRODUCTS: 2 ISOFORMS; HWW (SHOWN HERE) AND LAW; ARE PRODUCED BY ALTERNATIVE SPLICING.
-I. TISSUE SPECIFICITY: PLASMA.
-I. TISSUE SPECIFICITY: PLASMA.
-I. SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DISULFID DISULFID DISULFID DISULFID
                              EMBL; D84435;
EMBL; D84415;
                                                                           modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                        This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   008677; 008676;
01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
                                                                                                                         use
                                                                                                                                      the European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
1: FUNCTION: (1) KININGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
1: HMW-KININGEN PLAYS AN IMPORTANT ROLE IN BLOOD COAGULATION BY
HELPING TO POSITION OPTIMALLY PREKALLIKREIN AND FACTOR XI NEXT TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=C57BL/6 x CBA; TISSUE=Liver;
Takano M., Kondoh J., Yayama K., Ok
"Molecular cloning of cDNAs for mou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammalia; Eutheria;
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           kininogen."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KININOGEN PRECURSOR [CONTAINS: BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KNG_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             472 GHGHKHGHGKHKNKGKNNGKHYDWRT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                                                                   SWISS-PROT entry is copyright. It is produced through
sen the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                        non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    205
228
263
327
350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                            BAA19742.1;
                                              BAA19743.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       217
247
266
339
369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83.1%;
82.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         68890 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for mouse low- a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HMW AND LMW).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Craniata; Vértebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       D16850BEFE3C55CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          147;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.7e-11;
                                                                                                                                    There are no restrictions
                                                                                         http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and high- molecular
                                                                                                        Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                        bу
                                                                                                         and
                                                                                                                                                      EMBL
                                                                                                                                                        a collaboration -
                                                                                                         for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                      outstation
                                                                                                         in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
```

```
KNG
                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                              Ωy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local s
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARSPLIC
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                       01-NOV-1988 (Rel. 09, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00031; cystatin; 3.
PRINTS; PR00334; KININOGEN;
PROSITE; PS00287; CYSTATIN; 1.
Glycoprotein; Plasma; Repeat; Thiol protease inhibitor; Vasodilator;
Bradykinin; Blood coagulation; Inflammatory response; Signal;
                                                                                                                                                                      Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chor
Mammalia; Eutheria; Rode
MCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
InterPro;
Furuto-Kato S., Matsumoto A., Kitamura N., Nakanishi S.; "Primary structures of the mRNAs encoding the rat precursors ibradykinin and T-kinin. Structural relationship of kininogens major acute phase protein and alpha 1-cysteine proteinase
                                                                                                                                                                                                                                                                                 KNG_RAT
P08934; P08933;
                                                                                                   gene
                                                                                                             Kitagawa H., Kitamura
"Differing expression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIGNAL
                                                 MEDLINE=86008264; PubMed=2413018,
                                                             SEQUENCE FROM N.A.
                                                                                                                                    MEDLINE=87137443; PubMed=3029068
                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                  KININOGEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alternative
                                                                                                                                                                                                                                                                                                                                                       514
                                                                                                                                                                                                                                                                                                                    տ
                                                                                                                                                                                                                                                                                                                                                                    GHKHKHGHGHGKHKNKGKKNGKHNGWKT
                                                                                                  family.";
                                                                                                                                                                                                                                                                                                                                                       GHGHGHGHGKHTNKDKNSVKQTTQRT
                                                                                                                                                                                                                                                                                                                                                                                                         16;
                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                      Chem.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR002395;
IPR003243;
                                                                                                                                                                                                                                  PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 433
661 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 19
389
389
19
19
19
136
258
258
20
107
1141
1168
833
107
1168
822
1168
822
1168
                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                     262:2190-2198(1987).
                                                                                                                                                                                                                                                                                            STANDARD;
                                                              (LMW ISOFORM).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
73102
                                                                                                                                                (ISOFORMS
                                                                                                                                                                                  Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [CONTAINS:
                                                                                                                                                                                                                                                                                                                                                                                                                 52.5%;
                                                                                                             patterns
                                                                                                                        N., Hayashida H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₩;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INTERCHAIN (BY SIMILARITY).

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

BY SIMILARITY.

B
                                                                                                                                                                                                                                                                                                                                                                                                     Score 93; DB Pred. No. 0.00 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BRADYKININ.
KININOGEN LIGHT (
CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
HIS-RICH.
                                                                                                                                               HMW AND LMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MISSING (IN ISOFORM LMW). 774460258D58796E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KININOGEN HEAVY
                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                            PRT;
                                                                                                            and
                                                                                                                                                                                                                              BRADYKININ].
                                                                                                                                                                                                                                                                                                                                                                              28
                                                                                                             evolution
                                                                                                                                                                                                                                                                                            639
                                                                                                                      Miyata T.,
                                                                                                                                                                                                                                                                                                                                                                                                                 .0002;
                                                                                                                                                                                                                                                                                            A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                                                                                             of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 661;
                                                                                                             the
                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                       Nakanishi S.;
                                                                                                            rat kininogen
                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                  Rattus
                with
                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RLLRA
                                                                                                                                                                                                                                                                                                                                                                                                      0;
     CHAIN
CHAIN
PEPTIDE
                                                                                                                                                                                 EMBL;
EMBL;
EMBL;
EMBL;
                                                                                                                                                          PIR;
PIR;
                                                   SIGNAL
```

```
RA Kageyama R., Kitamura N., Ohkubo H., Nakanishi S.;
RA Kageyama R., Kitamura N., Ohkubo H., Nakanishi S.;
RT "Differing utilization of homologous transcription initiation sites
RT of rat K and T kininogen genes under inflammation condition.";
RL J. Biol. Chem. 262:2345-2351(1987).
CC ... FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
CC ... FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
CC ... FUNCTION: (1) KININOGENS ARE INHIBITORS OF THIOL PROTEASES; (2)
CC ... FUNCTION: (1) HAM-KININOGEN INHIBITORS OF THE COAGULATION BY
CC HELPING TO POSITION OPTIMALLY PREVALLIRERIN AND FACTOR XI NEXT TO
CC FACTOR XII; (3) HAM-KININOGEN INHIBITS THE THROMBIN-AND PLASMIN-
CC HAMDYKININ THAT IS RELEASED FROM HAM-KININOGEN SHOWS A VARIETY OF
CC PHYSIOLOGICAL EFFECTS: (4A) INFLUENCE IN SMOOTH MUSCLE
CONTRACTION, (4B) INDUCTION OF HYPOTENSION, (4C) NATRIURESIS AND
CC DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
CC DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
CC DIURESIS, (4D) DECREASE IN BLOOD GLUCOSE LEVEL, (4E) IT IS A
CC OTHER MEDIATORS OF INFLAMMATION OF NOCICEPTORS (4E) RELEASE OF
CC OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
CC OTHER MEDIATORS OF INFLAMMATION (E.G. PROSTAGLANDINS), (4F) IT HAS
CC INDIRECTLY VIA EMPOTED DERIVED RELAXING FACTOR ACTION; (5)
CC LAMW-KININGEN INHIBITS THE AGGREGATION OF THROMBOCYTES; (6) LMW-KININGEN IS IN CONTRAST TO HAW-KININGEN NOT INVOLVED IN BLOOD
CC LAMW-KININGEN IS NO CONTRAST TO HAW-KININGEN NOT INVOLVED IN BLOOD
CC LATERNATIVE PRODUCTS: 2 ISOFORMS; HAW (SHOWN HERE) AND LMW; ARE
CC PRODUCED BY ALTERNATIVE SPLICING.
C. -I SUBCELLANEOUS: RAT EXPRESS FOUR TYPES OF KININGENS: T-I AND
C. -I MISCELLANEOUS: RAT EXPRESS FOUR TYPES OF KININGENS: T-I AND
C. -I MISCELLANEOUS: RAT EXPRESS FOUR TYPES OF KININGENS: T-I AND
C. -I MISCELLANEOUS: RAT EXPRESS FOUR TYPES OF KININGENS: T-I AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein (thiostatin)
J. Biol. Chem. 262:9:
                                                                                                                                                                                          Bradykinin;
                                                                                                                                                                                                                           Glycoprotein;
                                                                                                                                                                                                                                                      PRINTS; PR00334; KININOGEN. PROSITE; PS00287; CYSTATIN;
                                                                                                                                                                                                                                                                                                                   Pfam; PF00031; cystatin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=WISTAR; TISSUE=Liver; MEDLINE=87137465; PubMed=3818598;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fung W.-P., Schreiber G.;
"Structure and expression of the genes
                                                                                                                                                           Alternative
                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR000010; -. InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=87250580; PubMed=2439509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              inhibitor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               . Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                                             SL; L29428; AAA41486.1; -.
LL; M11884; AAA41487.1; -.
SL; M14369; AAA41485.1; ALT_
SL; M16455; AAA41482.1; -.
R16455; AAA41482.1; -.
R25486; A25486.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY: CONTAINS 3 CYSTATIN-LIKE DOMAINS
                                                                                                                                                                                                                                                                                                                                                                                                                     A28055; A28055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     requires a license agreement (See http://www.isb-sib.ch/announce/
an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (thiostatin) and kininogen in Chem. 262:9298-9308(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OF 1-41 FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chem.
                                                                                                                                                        Blood coan splicing;
19
181
390
                                                                                                                                                        Plasma; Repeat; Thiol protease inhibitor; Vasodilator; slood coagulation; Inflammatory response; Signal; plicing; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   260:12054-12059(1985).
18
639
380
389
639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ALT_SEQ.
                                                                                                                                                                                                                                                          2
                           KININOGEN H
BRADYKININ.
                                                                                           KININOGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                for major acute phase alpha
the rat.";
                                                            HEAVY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Usage
                                                            CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Уď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             restrictions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             in no way commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
```

KININOGEN LIGHT CHAIN

```
RTISSUE-Intestine;

RA MEDLINE-98226729; PubMed-9560190;

RA MEDLINE-98226729; PubMed-9560190;

RA MCMAhon R.J., Cousins R.J.;

RA MCMAhon R.J., Cousins R.J.;

RT "Regulation of the zinc transporter znT-1 by dietary.zinc.";

RT Proc. Natl. Acad. Sci. U.S.A. 95:4841-4846(1998).

CC -!- FUNCTION: MAY BE INVOLVED IN ZINC TRANSPORT OUT OF THE CELL.

CC -!- SUBCULIULAR LOCATION: INVEGRAL MEMBRANE PROTEIN.

CC -!- SUBCULIULAR LOCATION: INVEGRAL MEMBRANE PROTEIN.

CC -!- TISSUE SPECIFICITY: WIDELY EXPRESSED. LOCALIZED ON THE ENTEROCYTES.

CC -!- TISSUE SPECIFICITY: WIDELY EXPRESSED. THE PROTEIN IS DETECTED IN CT TISSUE SPECIFICITY: WIDELY EXPRESSED. THE PROTEIN IS DETECTED IN CC.

CC -!- TISSUE SPECIFICITY: WIDELY EXPRESSED. THE PROTEIN IS DETECTED IN DUDDENUM AND JEJUNUM BUT NOT IN ILEUM AND COLON.

CC -!- INDUCTION: SLIGHTLY BY ZINC IN THE INTESTINE, BUT NOT THE LIVER.
                              RESULT
ZNT1_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                              ZNT1_RAT
Q62720;
30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
DOMAIN
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
DISULFID
                                                                                                                                                                                                                                                                                                                                                                     30-MAY-2000 (Rel. 39, Last sequence update) 01-OCT-2000 (Rel. 40, Last annotation update) ZINC TRANSPORTER 1 (ZNT-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
CARBOHYD
                                                                                                                                                                                                                          Palmiter R.D., Findley S.D.; "Cloning and functional characterization of a mammalian zinc transporter that confers resistance to zinc.";
                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                MEDLINE=95188868; PubMed=7882967;
                                                                                                                                                                                                                                                                                TISSUE=Kidney;
                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                    Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                 SLC30A1 OR ZNT1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               492
                                                                                                                                                                                                                                                                                                                                                                                                                                                            σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GHKHKHGHGHGKHKNKGKKNGKH
                                                                                                                                                                                                                     J. 14:639-649(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GHGHGHGRDKHTNKDKNNVKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           l Similarity
15; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    434
61
639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                              39, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    639
61
70933
                                                                                                                                                                                                                                                                                                                            Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49.7%;
65.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , WM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYSTATIN-LIKE 1.
CYSTATIN-LIKE 2.
CYSTATIN-LIKE 3.
CYSTATIN-LIKE 3.
LYTERCHAIN (BY S
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
BY SIMILARITY
LYTINKED (GLCNAC
N-LINKED (GLCNAC
N-LINKED (GLCNAC
N-LINKED (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 88; DB 1;
Pred. No. 0.0008;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MISSING (IN ISOFORM LMW).
E -> K (IN REF. 2).
D3172DF94FF56AF5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EME)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
VSPSYIARVOEERDPORGOGTHGHGWLHAKQ -> RLLNS
CEYKGRLLKAGAGPAPERQAEASTVTP (IN ISOFORM
                                                                                                                                                                                                                                                                                                                           Craniata; Veri
Sciurognathi;
                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                     507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GLCNAC...
(GLCNAC...
(GLCNAC...
(GLCNAC...
                                                                                                                                                                                                                                                                                                                           Vertebrata; Euteleostomi;
thi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                    A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω N P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                          Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
```

```
RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
         This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Exthe European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
CARBOHYD
SEQUENCE
                                                                                 -i- FUNCTION: REQUIRED MATERNALLY FOR PROPER HOMEOTIC GENES INVOLVED IN PATTERN FORMATION SIMILARITY: HIGH, TO HUMAN RING3 PROTEIN.
-i- SIMILARITY: CONTAINS 2 BROMODOMAINS.
-i- SIMILARITY: CONTAINS 1 ET DOMAIN.
                                                                                                                                                    apparent membrane proteins."
Dev. Biol. 134:246-257(1989)
                                                                                                                                                                              "The
                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Pterygota; Neoptera; Endopterygota; Diptera; Brachyoe Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                               FSH_DROME STANDARD; PRT; 2038 AA.
P13709; P13710;
01-JAN-1990 (Rel. 13, Created)
01-JAN-1990 (Rel. 13, Last sequence update)
01-CCT-1996 (Rel. 34, Last annotation update)
FEMALE STERILE HOMEOTIC PROTEIN (FRAGILE-CHORION MEMBRANE PROTEIN).
FS(1)H OR FSH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute of Bioinf the European Bioinformatics Institute.

use by non-profit institute.
                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                             "The Drosophila ish locus, a maternal effect homeotic gene, encodes
                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE=89276730; PubMed=2567251;
                                                                                                                                                                                                                                                NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U17133; AAA79234.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GHKHKHGHGHGKHKNKG-KKNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GHGHSHGHGHG-HLAKGARKAGRAGG 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PF01545; Cation_efflux; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               l Similarity 57. 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR002524; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
31
35
56
78
99
113
134
2247
2247
2307
2308
307
5507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Transmembrane; Multigene
10 CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          41.2%;
57.7%;
                                                                                                                                                                                                                                                         Endopterygota; Diptera; Brachycera; Muscomorpha;
ilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Æ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6 X 2 AA APPROXIMATE REPEATS OF H-G.
N-LINKED (GLCNAC. . .) (POTENTIAL).
; 9F9770017C2455FC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EXTRACELLULAR (POTENTIAL)
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CYTOPLASMIC POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOPLASMIC POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EXTRACELEULAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             No.
                                                                                                                            PROPER EXPRESSION OF OTHER N FORMATION, SUCH AS UBX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              There are no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .044;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             e family; Repeat. (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                      Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restrictions
                                                            a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    for commercia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ín
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
```

license agreement (See http://www

isb-sib.ch/announce/

and

for

in no way

no on

There are no restrictions in as its content is in

EMBL outstation

```
KE4_BRARE
                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                           δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                            use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license against the statement is not removed.
                                                                                                                                                                                                                                                                     Q9PUB8;
01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HISTIDINE-RICH MEMBRANE PROTEIN KE4 HOMOLOG (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
TRANSMEM
                                                                                                     This
                                                                                                                               Murray B.W., Sueltmann H., Klein J.;
"Identification of a homolog of the human HKE4 gene in zebrafish.";
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
-i- SUBCELLULAR LOCATION: INTECRAL MEMBRANE PROTEIN (PROBABLE).
Transmembrane; Glycoprotein
                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                Brachydanio rerio (Zebrafish) (Zebra danio).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii, Neopterygii; Teleostei; Buteleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Rasborinae; Danio.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; M15762; AAA70424.1; -. EMBL; M15763; AAA70423.1; -. EMBL; M15764; AAA70422.1; -.
           EMBL; AF196345; AAF05821.1; -.
                                                                                                                                                                                                                                                                                                                               KE4_BRARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00633; BROMODOMAIN_1; 2.
PROSITE; PS50014; BROMODOMAIN_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P04002; 1WFA.
FlyBase; FBgn0004656; fs(1)h.
                                                                                                                                                                                  SEQUENCE FROM N.A
                                                                                                                                                                                                      NCBI_TaxID=7955
                                                                                                                                                                                                                                                               HKE4.
                                                                                                                                                                                                                                                                                                                                                                                       597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PIR; A43742; A43742.
                                                                                                                                                                                                                                                                                                                                                                                                           1 GHKHKHGHGHGKHKNKGKKNGKHNGW 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      send
                                                                                                                         SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.
                                                                                                                                                                                                                                                                                                                                                     æ
                                                                                    SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                      GHGHGHGHGHGHGHGHGHGHGHGY 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PF00439; bromodomain; S; PR00503; BROMODOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           M15762;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   M23221; AAA28540.1; -.
M23222; AAA28541.1; ALT_TERM.
                                                                                                                                                                                                                                                                                                                                                                                                                                 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IPR001487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51
495
945
330
451
750
790
816
874
1731
1939
1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       email
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  protein;
                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              123
1106
350
370
471
770
810
830
830
830
1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1022
                                                                                                                                                                                                                                                                                                                                                                                                                                            40.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTENTIAL POTENTIAL POTENTIAL G -> A H -> RKr 205332 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bromodomain;
                                                                                                                                                                                                                                                                                                                                                                                                                                 ω,
                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 71;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BROMODOMAIN
BROMODOMAIN
                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         849E0706D50A0098 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Transmembrane; Repeat
                                                                                                                                                                                                                                                                                                                               352 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N 1-
                                                                                                                                                                                                                                                                                                                                                                                                                                            . 29;
                                                                                                                                                                                                                                                                       (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2038;
                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                       n no way
                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δõ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SPETTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 14; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZNT1_MOUSE STAN
Q60738;
30-MAY-2000 (Rel. 3
30-MAY-2000 (Rel. 3
01-OCT-2000 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L_MOUSE
            DOMAIN
TRANSMEM
DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TRANSMEM
DOMAIN
DOMAIN
CARBOHYD
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TRANSMEM
TRANSMEM
TRANSMEM
TRANSMEM
                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                   EMBO J. 14:639-649(1995).

-!- FUNCTION: MAY BE INVOLVED IN ZINC TRANSPORT OUT OF THE CELL.
LETHALITY OF KNOCKOUT EARLY IN GESTATION SUGGESTS A ROLE OF
PROTEIN IN FETAL ZINC ACQUISITION AND RETENTION.
                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                             TRANSMEM
                                                                       DOMAIN
                                                                                    TRANSMEM
                                                                                               DOMAIN
                                                                                                           Zinc;
                                                                                                                     Pfam; PF01545; Cation_efflux; 1.
                                                                                                                                            EMBL; U17132; AAA79233.1; MGD; MGI:1345281; Slc30a1.
                                                                                                                                                                                                     use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - between Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                   Palmiter R.D., Findley S.D.;
"Cloning and functional characterization of transporter that confers resistance to zinc.
EMBO J. 14:639-649(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZINC TRANSPORTER 1 (ZNT-1).
SLC30A1 OR ZNT1.
                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=95188868; PubMed=7882967;
                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                   [nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GHKHKHGHGHGKHKNKGKK---NGKHN 24
                                                                                                                                                                                                                                                                      SUBUNIT: MULTIMER (PROBABLE).
SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN.
LOCALIZED ON THE PLASMA MEMBRANE (PROBABLE).
TISSUE SPECIFICITY: WIDELY EXPRESSED.
SIMILARITY: BELONGS TO THE SLC30A FAMILY OF TRANSPORTERS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHAHKHGHAHDHGAEKSKKVVEAGKRN 120
                                                                                                        Transport;
                                                                                                                                IPR002524;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3
128
161
215
318
318
24
177
311
352
352
  11
32
36
57
79
100
114
135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
Transmembrane; Multigene fa
10 CYTOPLASMIC (PC
31 POTENTIAL.
35 EXTRACELLULAR (
66 POTENTIAL.
78 CYTOPLASMIC (PO
99 POTENTIAL.
113 EXTRACELLULAR (
134 POTENTIAL.
243 CYTOPLASMIC (PO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           23
148
181
235
338
338
105
217
217
311
352
37922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  39, Created)39, Last sequence up40, Last annotation
                                                                                                                                              S1c30a1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 39.3%;
51.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 69.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HIS-RICH.
HIS-RICH.
                        EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED (GLCNAC. .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C8C8C60F6D2BA8A6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ΑA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB
. 085;
                                                                                              e family; Repeat. (POTENTIAL).
                                                                        (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                ." ₪
                                                                                                                                                                                                    Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                                                                                                                                                                                                                                                                                                                                                                                          mammalian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                       v
Vd
                                                                                                                                                                                                       and
                                                                                                                                                                                                       for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ψ
                                                                                                                                                                                                      in no way commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                               THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ۲.
```

CYTOPLASMIC (POTENTIAL)

```
KE4L_CAEEL
ID KE4L_CAEEL
ID KE4L_CAEC
AC Q9XTQ7
DT 01-OCT
DT 01-OCT
DT 01-OCT
DT 01-OCT
DE HYPOTH
GN H13N06
OS Caenor
OC Eukary
OC Rhabdi
OX NCELT
RN [1]
RP SEQUEN
RC STRAIN
RA Lennar
RL Submit
CC -!- SI
CC -!- SI
CC -!- SI
CC -!- SI
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC This s
CC
 ₽
                                   Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFFFFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                       Query Match
Best Local S
Matches 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                TRANSMEM
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-OCT-2000
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9XTQ7;
01-OCT-2000
                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                            TRANSMEM
                                                                                                                                                                                                                                                                                                                                TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                      TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WormPep;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Lennard N.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KE4L_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE

    -!- SUBCELLULAR LOCATION: INTEGRAL MEMBRANE PROTEIN (PROBABLE).
    -!- SIMILARITY: BELONGS TO THE KE4/CATSUP FAMILY.

 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145 GHGHSHGHGHG-HLAKGARKAGRAG
                                                                                               Local Similarity
                                     ب
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKHKHGHGHGKHKNKGKKNGKHNG
                                   GHKHKHGHGHGKHKNKGKKNGKHN----GW
 GHSHSHGHSHG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Z99942; CAB17070.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        l Similarity
13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                               H13N06.5; CE18815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               244
265
304
325
145
294
503
                                                                                                                                                                                                                                                   49
214
247
297
297
386
429
463
92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Rel. 40, Created)
(Rel. 40, Last sequence update)
(Rel. 40, Last annotation update)
L KE4-LIKE PROTEIN H13N06.5 IN CHROMOSOME
                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
303
324
503
156
294
54716
                                                                                                                                                                        488
55500 !
                                                                                                                                                                                                                                                   47
69
234
267
317
406
449
483
182
7
-GGGHSHGAHDMSVGGW 302
                                                                                                                                                                                                               237
379
                                                                                             39.3%;
43.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .'
                                                                                                                                                                          ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MW;
                                                                                                                                                                    N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
N-LINKED (GLCNAC...
N-17D7E854F4E1DAAF CI
                                                                         <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 69.5; I
Pred. No. 0.12
1; Mismatches
                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EXTRACELLULAR (POTENTIAL).

POTENTIAL.

CYTOPLASMIC (POTENTIAL).

6 X 2 AA APPROXIMATE REPEATS OF H-G.

N-LINKED (GLCNAC. .) (POTENTIAL).

; 7C4FF93FC13CDA22 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                     POTENTIAL.
                                                                                                                                                                                                                                                                                                                            POTENTIAL.
                                                                                                                                                                                                                                                                     HIS-RICH.
                                                                                                                                                                                                                                                                                       POTENTIAL.
                                                                                                                                                                                                                                                                                                          POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                      POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25
                                                                           Mismatches
                                                                                             No. 0.
                                     26
                                                                                                                                                                                                                                                                                                                                                                                                                                         Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  515
                                                                                             .12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 1;
.12;
                                                                                                              DB
                                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10;
                                                                           8
                                                                                                                                                                                        (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                        CRC64;
                                                                                                          Length 515;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 503;
                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ۲,
                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                         2
```

```
CAUP_DROME

ID CAUP_DROME

AC P54269;

DT 01-0CT-1996 (
DT 01-0CT-2000 (
DT 01-0CT-2000 (
DE HOMEDBOX PROTING

GN CAUP.

OS Drosophila me

OC Eukaryota; Me

OC Ephydroidea;

OX NCBI_TaxID=72

RN [1]

RP SEQUENCE FROM

RX MEDLINE=96180

RA Gomez-Skarmet

RA Ferres-Marco

RT "Araucan and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
2C_DICDI
ID 2C_DICDI
ID 2C_DICDI
ID 2C_DICDI
AC p15648;
DT 01-APR-1990
DT 01-APR-1990
DT 01-OCT-1994
DE 2C PROTEIN.
GN 2C.
OS Dictyosteliu
OC EMARYOTA: M
OX NCBL_TAXID=4.
RN [1] TAXID=4.
RN SEQUENCE FROI
RR SEQUENCE FROI
RR MEDLINE=9020.
RR Ammji D....
RY "Two Cyclic.
RT homologous p.
McDLINE=9020.
RT HOMOLOGOUS p.
RT HOMOLOGOUS p.
RT HOMOLOGOUS p.
RT DOMAIN.
CC -I- DOMAIN.
CC This SWISS-P.
CC This SWISS-P.
CC This SWISS-P.
CC The European
CC the European
CC use by non
CC modified and
CC entities req
CC or send an el
CC or send an el
CC or send an el
CC or send an el
CC or send an el
CC or send an el
CC or EMBL; X16827
DR DOMAIN.
FT DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 39.1
Best Local Similarity 55.1
Matches 11; Conservative
                SEQUENCE FROM N.A.
MEDLINE-96180722; PubMed-8620542;
Gomez-Skarmeta J.-L., del Corral
Ferres-Marco D., Modolell J.;
                                                                                                                                                          Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on little
                                                                                                                                        Pterygota; Neoptera;
                                                                                                                                                                                                              HOMEOBOX PROTEIN CAUPOLICAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X16827; CAA34727.1; PIR; S08137; S08137.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=90205618; PubMed=2157129;
Ramji D.P., Richards A.J., Jagger P.,
"Two cyclic AMP-regulated genes from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Dictyostelium discoideum (Slime mold).
Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DictyDb; DD05011; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               homologous proteins.";
Mol. Microbiol. 4:129-135(1990)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=44689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- DEVELOPMENTAL STAGE: EXPRESSED ONLY LATE IN DEVELOPMENT EXPRESSION CEASES UPON CELL DISAGGREGATION BUT IS FULLY
                                                                                                                                                                                                                                                                                                                                                                                           74
                                                                                                                                                                                                                                                                                                                                                                                                                          2 HKHKHGHGHGKHKNKGKKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: TO PROTEIN 7E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY EXOGENOUS CAMP.

DOMAIN: MAY FORM AN EXTENDED COIL
                                                                                                                                                                                                                                                                                                                                                                                           HNHGHGNGHGPHGHGGKGSG
 and caupolican, two members of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98 AA;
                                                                                                                                                                                                                           (Rel. 34, Created)
(Rel. 34, Last sequence update)
(Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel.
(Rel.
(Rel.
                                                                                                                     eoptera; Endopterygota; Diptera; Brachycera; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                40
                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14, Last sequence up 30, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW;
                                  Corral R.D.,
                                                                                                                                                                                                                                                                                                                                                                                           93
                                                                                                                                                                                                                                                                                                                                                                                                                          21
                                                                                                                                                                                                                                                                                                                                                                                                                                                            ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SER-RICH.
GLY-RICH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BD7BFDF649EB1D50
                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           update)
                                                                                                                                                                                                                                                                                                      693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bleasby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRUCTURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86
                                  de la
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB
                                                                                                                                                                                                                                                                                                      ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .03;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A
 novel iroquois complex,
                                    Calle-Mustienes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Α.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hames B.D.;
m discoideum encode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FULLY RESTORED
                                                                                                                                         Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collaboration -
L outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       in
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     way
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
```

•

```
STITITION OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESCOPE OF THE TENESC
  VG50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _HSVI1
                                                                                                                                                                                                                                                                                                                                                                                                                                         01-DEC-1992
01-OCT-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q00130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cell
                                                                                                            This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-DEC-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                    the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                   "Channel catfish virus:
Virology 186:9-14(1992).
                                                                                                                                                                                                                                                                                                                          Viruses; dsDNA viruses, no
unclassified Herpesviridae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; X95178; CAA64485.1; -. HSSP; P02833; 1SAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    encode
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS00027; HOMEOBOX_1; 1. PROSITE; PS50071; HOMEOBOX_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FlyBase; FBgn0015919; caup.
InterPro; IPR001356; -.
                                                                                                                                                                     'Channel
                                                                                                                                                                                                Davison A.J
                                                                                                                                                                                                                  MEDLINE=92087490; PubMed=1727613;
                                                                                                                                                                                                                                           STRAIN-AUBURN
                                                                                                                                                                                                                                                               SEQUENCE FROM
                                                                                                                                                                                                                                                                                                      NCBI_TaxID=10401;
                                                                                                                                                                                                                                                                                                                                                                                                                    HYPOTHETICAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Transcription
                                                                                                                                                                                                                                                                                                                                                                   (Ctalurid herpesvirus 1 (Channel catfish virus) (CCV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GHKHKHGHGHGKHKNKGKKNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       European Bioinformatics Institute.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: CONTROLS PRONEURAL AND VEIN FÓRMING GENES. POSITIVE TRANSCRIPTIONAL CONTROLER OF AC'-SC (ACHAETE-SCUTE). MAY ACT AC ACTIVATOR THAT INTERACTS WITH THE TRANSCRIPTIONAL COMPLEX ASSEMBLED ON THE AC AND SC PROMOTERS AND PARTICIPATES IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: BELONGS TO THE TALE/IRO FAMILY OF HOMEOBOX PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _HSVI1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSCRIPTION INITIATION.
                                                                                 SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GHGHSHGHGHGHGLGHGHGLGHG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through en the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  85:95-110(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PF00046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             homeoproteins that control proneural and vein-forming genes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     non-profit institutions as long as its content is in and this statement is not removed. Usage by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     requires a license agreement (See http://www.isb-sib.ch/announce/
requires a license agreement (See http://www.isb-sib.ch/announce,
                                                                                                                                                                                                                                                                                                                                                                                                                (Rel. 24, Created)
(Rel. 24, Last sequence update)
(Rel. 34, Last annotation update)
L GENE 50 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              226
300
405
501
517
565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                             - Z
- Z
- A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     regulation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĀĀ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       homeobox; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   288
303
418
516
528
572
572
624
73749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               39.0%;
                                                                                                                                                                       a new type of herpesvirus.";
                                                                                                                                                                                                                                                                                                                                                 no RNA stage; Herpesviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ₩,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA-binding; Homeobox; Nuclear protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUCLEAR (PROBABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 69; DB Pred. No. 0.18 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLY-GLN.
POLY-GLN.
POLY-HIS.
POLY-SER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POLY-SER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HOMEOBOX (TALE-TYPE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8E0D6D43C9CDC619 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             670
                                      long as
                                 rmatics and the EMBL outstati
There are no restrictions on
ong as its content is in no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA
                  Usage by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 693;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and the
                      and for
                                                                                   EMBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL outstation
                                                                                     a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a collaboration - MBL outstation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                    in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AS AN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
```

```
CCCCCCCTTT RAX RANGE
                                                                                                                                                                                                                                                             RESULT 14
SKGR_XENLA
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                    δ.
                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 12
                                                                 Berger H., Kell G.,
Berger H., Kell G.,
"The constituents of storage days. Structure of a basic laevis. Structure 249:293-296(1989).
                                                                                                                                                                                                             01-JAN-1990 (Rel. 13, Created)
01-APR-1990 (Rel. 14, Last sequence up
01-JUN-1994 (Rel. 29, Last annotation
modified and this statement is not removed. entitles requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                          SKGR_XENLA
P13673;
                           This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was been profit institutions.
                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                     SKIN GRANULE PROTEIN PRECURSOR
                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                  REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                     REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REPEAT
REPEAT
REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or send an email to license@isb-sib.ch).
                                                                                                                MEDLINE=89289999; PubMed=2737290,
                                                                                                                                                     NCBI_TaxID=8355;
                                                                                                                                                                        Amphibia;
                                                                                                                                                                                            Xenopus laevis (African clawed frog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical
REPEAT
                                                                                                                           rissue-skin;
                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                              Kenopodinae;
                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIR; F36791;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; M75136;
                                                                                                                                                                                                                                                                                                   642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REPEAT
                                                                                                                                                                                                                                                                                                                     1 GHKHKHGHGHGKHKNKGKKNG
                                                                                                                                                                                                                                                                                                   GHGHGHGHG-HGGRGPPGG
                                                                                                                                                                                                                                                                                                                                        l Similarity
12; Conser
                                                                                                                                                             Batrachia;
                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          protein; Repeat.
143 158
171 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       F36791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA88153.1;
                                                                                                                                                                                                                                                                                                                                                                                      A,
                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                477
493
517
531
545
559
573
573
587
601
615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             186
214
233
252
268
293
309
349
376
                                                                                                                                                                                                                                                                                                                                                                                      64174
                                                                                                                                                                       Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                                                                                                 38.1%;
57.1%;
                                                                                                                                                                                                                                                                                                                                                                                      ¥.
                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                      21
                                                                                  granules in polypeptide
                                                                                                                                                                                                                                                                                                                                                 Score 67.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                               26.
27.
                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                      2B64A781C519E8B4 CRC64;
                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                    213
         (See http://www.isb-sib.ch/announce,
                                                                                                                                                                                                                                                                                                                                                 DB
. 27;
                                                                                    the dermal glands of Xenopus deduced from cloned cDNA.";
                                                                                                                                                                                                                                                   AA
                   Usage
                                                                                                                                                                                                                                                                                                                                                          1;
                                                                                                                                                                                                                                                                                                                                                         Length 670;
                                                                                                                                                                                                                                                                                                                                         Indels
                    Ьy
                   and for
                                                                                                                                                                                                                                                                                                                                        ۲,
                                                collaboration -
Coutstation -
                                                                                                                                                                                                                                                                                                                                        Gaps
                   commercial
                                                                                                                                                                                                                                                                                                                                        1;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCC DR DR FTT FTT FTT STT SQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 15
T2D2_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; Y07507; CAA68806.1; -
PIR; S04491; S04491.
Amphibian skin; Signal; Rep
SIGNAL 27 213
COHAIN 27 104
REPEAT 27 48
REPEAT 49 70
REPEAT 71 92
                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                 DOMAIN
DOMAIN
                                                   TRANSFAC; T0Z120; -. FlvBase; FBgn0011836; Taf150.
                                                                                                                         use by non-profit institutions as long a modified and this statement is not removed. entitles requires a license agreement (See lor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                             binding to core promoter DNA.";
Science 264:933-941(1994).
-!- FUNCTION: TAFS ARE COMPONENTS OF THE TRANSCRIPTION FACTOR IID
-!- FUNCTION: TAFS ARE ESSENTIAL FOR MEDIATING REGULATION OF RNJ
POLYMERASE TRANSCRIPTION. TAFII-150 IS AN ESSENTIAL SUBUNIT WHICH
INTERACTS DIRECTLY WITH TBP AND TAFII-250 AND BINDS TO CORE
                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Embryo;
MEDLINE-9423377; PubMed-8178153;
Werrijzer C.P., Yokomori K., Chen J.-L., Tjian R.;
"Drosophila TAFII150: similarity to yeast gene TSM-1 and specific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      024325;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
TRANSCRIPTION INITIATION FACTOR TFIID 150 KDA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REPEAT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eukaryota; Neoptera; Endopteryota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ephydroidea; Dro
NCBI_TaxID=7227;
                                             Transcription regulation; Nuclear protein
                                                                                             EMBL; X79243; CAA55830.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND PARTIAL SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAF150.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TAFII150).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C2D2_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  168 GHKMKKLGKKKHHKNRHG-GKNHHKMKKIGKHHG 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GHK-----HKHGHGHGKHKNKGKKNGKHNG 25
                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: NUCLEAR.
SIMILARITY: TO YEAST TAFII-150 (TSM1).
                                                                                                                                                                                                                                                                                                PROMOTOR DNA.
SUBUNIT: TFIID IS COMPOSED OF TATA BINDING
                                                                                                                                                                                                                                                                                   NUMBER OF TBP-ASSOCIATED FACTORS (TAFS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93
213 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Signal; Repeat.
                                1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        104 4
23361 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37.9%;
47.1%;
   138533 MW;
HIGHLY CHARGED.

W; 72A5B473E26FD064 CRC64;
                              BINDS TO TBP AND TAFII-250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 67; DB 1;
Pred. No. 0.11;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SKIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (INCOMPLETE).
903A5B987E212B49 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GRANULE PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1213 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA APPROXIMATE TANDEM REPEATS
                                                                                                                                       (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SUBUNIT (TAFII-150)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4.
                                                                                                                                                                                                                                                                                                 PROTEIN (TBP) AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 213;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
```

```
В
               δÃ
                                        Query Match
Best Local
                                Matches
1160 HKHKHKHRHSKDKDKERKD 1178
         2 HKHKHGHGHGKHKNKGKKN 20
                                11;
                                        Similarity
                                 Conservative
                                        37.98;
                                 ω
••
                                        Score 67;
Pred. No.
                                 Mismatches
                                        0
                                               DB 1;
                                5.
                                               Length 1213;
                                 Indels
                                0;
                                Gaps
```

0,

Search completed: July 6, 2001, 09:26:39 Job time: 970 sec

```
Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 s
                                                                                                                                                                                                                                                                                                                                                                                                                                    Database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OM protein -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Maximum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                   ő
                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
BB
                                                                                                                                                                                                 Score
 seq
seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein search, using sw model
                                                                                                                                                                                                                                                                                                                                          SPTREMBL_16:*
1: sp_archea:*
2: sp_bacteria:
3: sp_fungi:*
4: sp_human:*
5: sp_invertebb:
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle
9: sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             length: 0
length: 2000000000
                                                                                                                                                                                                  Match
 37..6
                                                                                                                                                                                                                                                                                                    10:
11:
12:
13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            July
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
Gapop 10.0 ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-437-912-6
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GHKHKHGHGKHKNKGKKNGKHNGWKT 28
                                                                                                                                                                                                                                                                                                                                                                                                              sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                    sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                   sp_invertebrate:*
                                                                                                                                                                                                                                                                                        sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                         sp_mammal:*
                                                                                                                                                                                                                                                                                                                        sp_rodent:*
                                                                                                                                                                                                                                                                                                                                sp_plant:*
                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6, 2001, 09:25:54; Search time 118.42 Seconds (without alignments) 31.283 Million cell updates/sec
                                                                                        99
199
177
173
173
1937
554
           179
179
197
251
693
337
255
                                                                                                                                                            126
450
686
                                                                                                                                                                                                  DB
  5
5
5
5
5
5
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gapext 0.5
                            Q9W3L3
Q9W4C1
Q9W435
Q9M0L8
Q9M0L8
Q9SM3E
Q18577
Q9VU00
Q9VHP7
Q9W4H2
Q9VY40
                                                                                                                                                                    009016
027920
                   Q9VK49
                                                                                                                                                            Q9VWS0
                                                                                                                                                                                                  IJ
                                                                                                                   Q9LYB2
Q39115
Q9LF59
                                                                                                                                                                                                                                                                                                                                                                                                                                                        summaries
                                                                                                                                                 Q9ZRC7
                                                                                                                                                                                                                               SUMMARIES
       Q9m435 quercus rob
022671 alnus gluti
09m018 arabidopsis
Q9m018 sporobolus
Q9sm38 sporobolus
Q18577 caenorhabdi
Q9vuh0 drosophila
Q9vuh7 drosophila
Q9vk49 drosophila
Q9vk49 drosophila
Q9vk49 drosophila
                                                                                                                 009016 rattus norv
027920 bradysia hy
09vws0 drosophila
09zrc7 alnus gluti
09ly2 arabidopsis
039115 arabidopsis
039115 arabidopsis
                                                                                               Q9w313 drosophila
Q9w4c1 drosophila
                                                                                                                                                                                                  Description
```

5	4	ω	2	Ξ	5		8	37	6	Š	34	ũ	2	ĭ	ö	9	8	27	8	5	24	ຣ	22	2	0
62	62.5	62.5		63		63.5	63.5	64	64	64	64	64	64	64.5	64.5	64.5	65	65	65	65.5	66	66	66	66	66 .
								36.2			٠			36.4		36.4	36.7	36.7	36.7	37.0	37.3	37.3	37.3	37.3	37.3
180	472	366	735	213	208	226	110	1150	1064	989	643	375	207	1493	549	398	1219	194	102	218	1893	1891	336	229	125
w	G	Ŋ	S	5	10	G	10	ഗ	ŋ	ر.	σ	10	10	ഗ	σ	10	G	U	10	S	σı	G	N	u	ω
Q9HEG5	Q9V471	Q9VGS1	Q9NES7	Q9GTNO	Q43402	Q9XUH9	064396	Q9VWN4	Q9V5N1	Q9W2S4	Q9U229	P93066	Q43397	Q9VEF7	Q18009	081036	Q9VT64	096853	004132	Q9V3P9	Q9W4J1	077275	Q55451	Q9XUI2	09Р6В0
Q9heg5 neurospora	_	Q9vgs1 drosophila		Q9gtn0 drosophila '	Q43402 brassica na	Q9xuh9 caenorhabdi	O64396 pisum sativ	Q9vwn4 drosophila	Q9v5nl drosophila	Q9w2s4 drosophila	Q9u229 caenorhabdi	P93066 brassica na	7	Q9vef7 drosophila	Q18009 caenorhabdi	O81036 arabidopsis	Q9vt64 drosophila	096853 schistosoma	$\sim$	_	Q9w4j1 drosophila	077275 drosophila	Q55451 synechocyst	Q9xui2 caenorhabdi	Q9p6b0 neurospora

ωωωωωωωωωωωωωωωωωωω

## ALIGNMENTS

```
RESULT
Q27920
                                                     밁
                                                                        ρy
                                                                                                                                                   RESULT
009016
 H
                                                                                                         Query Match
Best Local
                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                 009016
009016;
01-JUL-1997
01-JUL-1997
01-OCT-2000
                                                                                                                                                  NON_TER
NON_TER
SEQUENCE
Q27920
                                                                                                                                                                                              EMBL; AF003623; AAC09070.1; InterPro; IPR002395; -.
                                                                                                                                                                                                       "Strain-specific deletions in exon 10 of rat K-kininogen and T1-kininogen genes allow mapping of both genes to rat chromosome 11."; Mamm. Genome 8:791-792(1997).
EMBL; AF003623; AAC09070.1;
                                                                                                                                                                                                                                                                       STRAIN=DONRYU;
MEDLINE=97468288; PubMed=9321484;
                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus. NCBI_TaxID-10116;
                                                                                                                                                                                   PRINTS; PR00334; KININOGEN
                                                                                                                                                                                                                                                                                                                                                                         K-KININOGEN
                                                                                                                                                                                                                                                            Harris E.L., Grigor M.R., Innes B.A.,
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                               KNGK.
                                                                                                                                                                                                                                                  Jacob H.J.;
                                                                                              Local Similarity
nes 16; Conserv
                                                     76
                                                                1 GHKHKHGHGHG--KHKNKGKKNGKH 23
                    N
                                                     GQRHGHGHGHGRDKHTNKDKNNVKH
                                                                                                                                                   126 126
126 AA; 14092 MW;
                                                                                                                                                                                                                                                                                                                                                                                  (TrEMBLrel. (TrEMBLrel.) (TrEMBLrel.
PRELIMINARY;
                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                        (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                        49.7%;
                                                                                                                                                                                                                                                                                                                                                                                    04,
04,
15,
                                                                                              1;
                                                                                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
Last annotation update)
                                                                                                         Score 88;
Pred. No.
 PRT;
                                                                                                                                                   9CCDF8751DA49C88 CRC64;
                                                                                              Mismatches
450
                                                                                                                                                                                                                                                            Harrap S.B., Koike
                                                                                                                  DB 11;
AA
                                                                                                          .9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                               AΑ
                                                                                               6;
                                                                                                                  Length 126;
                                                                                              Indels
                                                                                                                                                                                                                                                             <u>.</u>
                                                                                              ?
                                                                                              Gaps
                                                                                              ۲.
```

```
RESULT
Q9VWS0
          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ρy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Barandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Wan K.H., Dayle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Doublon K.J., Evangelista C.C., Ferraz C., Ferriara S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gubart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gubart W.M., Glasser K.,
RA Harris N.L., Harvey D., Heiman T.J., Wei M.-H., Ibegwam C.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               027920;
01-NOV-1996
01-NOV-1996
01-NOV-1998
                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-BERKELEY;
MEDLINE-20196006; PubMed-10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit fly).
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CG6632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-MAY-2000
01-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q9VWSO;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9VWS0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Monesi N., Fernandez M.A., Fontes A.M., Baron B., Buttin G., Paco-Larson M.L.; "Molecular characterization of an 18 kb Bradysia hygida (Diptera, sciaridae)."; Chromosoma 103:715-724(195).
EMBL; U13892, AAA83555.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pterygota; Neoptera;
Sciaridae; Bradysia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
TISSUE-SALIVARY GLAND;
MEDLINE-95393845; PubMed=7664619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PC4-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=35572;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bradysia hygida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PC4-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHKHKHGHGKHKNKGKKNGKHNGWK 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHKHGHGHG--HGHGHGNNHHGGRK 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   450 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (TrEMBLrel.)
(TrEMBLrel.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47185 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arthropoda; Tracheata; Hexapoda; Insecta;
; Endopterygota; Diptera; Nematocera; Sciaroidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.18;
55.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01,
100,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 78;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1F0633CE9B7F964C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0.0062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5; Length 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   segment of DNA puff C4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Basso L.R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nakanishi Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
```

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
Shue B.C., Siden Kiamos I., Simpson M., Skupski M.P., Smith T.,
RA Syler E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Syirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
Ya J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Smith H.O.,
RA Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.;
"The genome sequence of Drosophila melanogaster.";
Science 287:2185-2195(2000).
DR EMBL, ABO03509; Anfal88881; -.
DR InterPro; IPR000169; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                Q9ZRC7;
Q9ZRC7;
01-MAY-1999
01-MAY-1999
01-MAY-2000
                                                                                                                            Dobritsa S.V., Mullin B.C.;

Pobritsa S.V., Mullin B.C.;

In vitro expression of actinorhizal nodulin AgNOD-GHRP and demonstration of its toxicity of Escherichia coli.";

(In) Stacey G., Mullin B.C., Gresshoff P.M. (eds.);

the Biology of Plant-Microbe Interactions:

Proceedings of the 8th International Symposium on Molecular Plant-Microbe Interactions, pp.1-1, Unknown Publisher (1996).
                                            protein from Alnus
                                                                                                                                                                                                                                                                                                       Magnoliophyta; eudicotyledons; Fagales; Betulaceae; Alnus.
 SEQUENCE FROM N.A.
                            Thesis (1993), The
                                                        "Isolation of a nodule-specific cDNA encoding a
                                                                                       TISSUE=ROOT NODULES;
                                                                                                                                                                                                                                          TISSUE=ROOT NODULES;
                                                                                                                                                                                                                                                         SEQUENCE FROM
                                                                                                                                                                                                                                                                                      NCBI_TaxID=3517;
                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae;
                                                                                                                                                                                                                                                                                                                                                                     AGNT84
                                                                                                                                                                                                                                                                                                                                                                                  ACTINORIZAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00308; ANTIFREEZEI.
PRINTS; PR00334; KININOGEN.
PROSITE; PS00639; THIOL_PROTEASE_HIS; UNKNOWN_1.
SMART; SM00249; PHD; 1.
SMART; SM00249; PHD; 1.
SEQUENCE 686 AA; 70647 MW; 17C56F19B5D2B901
                                                                                                                                                                                                                                                                                                                                                     Alnus glutinosa (Alder).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lasko P., Lei Y.,
Liu X., Mattei B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GHKHKHGHGHGKHKNKGKKNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GHGHGHGHGHGHHSSSGHGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PF00628; PHD; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   12;
                                                                                                        FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IPR001965; -. IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IPR000169; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lei Y., Levitsky A.A., Li J., Li Z., attei B., McIntosh T.C., McLeod M.P.,
                                                                                                                                                                                                                                                                                                                                                                                              9 (Tremblrel. 10,
9 (Tremblrel. 10,
) (Tremblrel. 13,
                                                                                                                                                                                                                                                                                                                                                                                   NODULIN AGNOD-GHRP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                         N.A.
                                                                                                        N.A.
                            glutinosa.'
University
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               43.5%;
57.1%;
                                                                                                                                                                                                                                                                                                                      Embryophyta; Tracheophyta; Spermatophyta;
dons; core eudicots; Rosidae; eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    21
                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1.
                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score
Pred.
                              of
                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           17C56F19B5D2B901 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                              Tennessee,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               77;
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 5;
0.013;
                              Knoxville, TN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     McPherson D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 686;
                                                        putative glycine-rich
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RT RT RT DR RT DR C
                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local :
                                                                                                                                                                                                Matches
                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                    01-MAR-2001
GLYCINE AND
CLONE:MFC19)
                                                                   Q39115
Q39115;
Q1-NOV-1996
                                                                                                                                                                                                                                                      PRINTS; PR00334; KININOGEN.
PROSITE; PS00190; CYTOCHROME_C; UNKNOWN_1.
Hypothetical protein.
SEQUENCE 199 AA; 21539 MW; E5D2BAC167R
                                                                                                                                                                                                                                                                                                                                                                                   Rudd S., I
Submitted
                                                                                                                                                                                                                                                                                                                                                                                            Obermaier
Rudd S., L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pawlowski K., Twigg P.G., Dobritsa S.V., Guan C., Mullin B.C "A nodule-specific gene family from Alnus glutinosa encodes and histidine-rich proteins expressed in the early stages of actinorhizal nodule development."; Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases. EMBL; U69156; AAD00171.1; -. IRRO02395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-0CT-2000 (TrEMBLrel. 15; Cr
01-0CT-2000 (TrEMBLrel. 15, La
01-MAR-2001 (TrEMBLrel. 16, La
HYPOTHETICAL 21.5 KDA PROTEIN.
                                                       01-NOV-1996
                                                                                                                                                                                                                                                                                                                       EU Arabidopsis sequencing pr
Submitted (APR-2000) to the
EMBL; AL163816; CAB87755.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Trachec
Magnoliophyta; eudicotyledons; core eudicots;
Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9LYB2;
01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9LYB2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
 Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T20010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-ROOT NODULES;
                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                    InterPro; IPR000345; -.
InterPro; IPR002395; -.
                                                                                                                                                                                                                                                                                                                                                                                                                    EQUENCE FROM N.A.
                                                                                                                                                    97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity nes 13; Conserv
                                                                                                                                                                                                Local Similarity
mes 13; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GHKHKHGHGHGKHKNKGKK--NGKHNG 25
                                                                                                                                                                        1 GHKHKHGHGHGKH---KNKGKKNGKHNG
                                                                                                                 σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GHRHVHGHGHGHVHGNGNEHGHGHHHG
                                                                                                                                                    GHGHGHGHRRHGRDHRHGRDRGHHRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PR00334; KININOGEN.
E 99 AA; 10567 MW;
                                                                                                                                                                                                                                                                                                                                                                                 er B., Ottenwa
, Lemcke K., M
ed (APR-2000)
                                (TrEMBLrel. 0 (TrEMBLrel. 1 PROLINE RICH
                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                 Ottenwaelder B., Duchemin D., Zeitler K., Mewes H.W., ke K., Mayer K.F.X., Quetier F., Salanoubat M.; R-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                         42.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42.9%;
48.1%;
 (Mouse-ear cress).
                        01, Created)
01, Last sequence update)
16, Last annotation update
H PROTEIN (GENOMIC DNA, CH
                                                                                                                                                                                                                                                                                                                                     project;
he EMBL/GenBank/DDBJ
                                                                                                                                                                                             Score 74.5; D
Pred. No. 0.00
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                <u>ب</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score
Pred.
                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2ACBE4D57C070E83 CRC64;
                                                                                                                                                                                                                                                       E5D28AC167B3FBF8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 77
                                                                                                                                                    124
                                                                                                                                                                         25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       76;
                                                                                           177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tracheophyta; Sp
dicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 10;
0.0026;
                                                                                          A
A
                                                                                                                                                                                                           .0083;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ₽
                                                                                                                                                                                                                    DB 10;
                                             update)
                                                                                                                                                                                                10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8;
                                                                                                                                                                                                                                                                                                                                      databases
                                   CHROMOSOME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 99;
                                                                                                                                                                                                                    Length 199;
                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Spermatophyta;
e; eurosids II;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                в.C.;
                                                                                                                                                                                                w
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     glycine
                                   Ρ1
                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                ۲,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ۲.
```

```
RESULT
09LF59
               A DR R P D DR R P D DR R P D DR R P D DR R P D DR R P D DR R P D DR R P D DR R P D DR R P D DR R P D DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR R P DR P DR R P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR P DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 15; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kaneko T., Katoh T., Sato S., Nakamura Miyajima N., Tabata S.;
"Structural analysis of Arabidopsis th Sequence features of the regions of 1, pl and TAC clones.";
DNA Res. 6:183-195(1999).
EMBL; X84315; CAA59059.1; -.
EMBL; X8019113; BAB019163.1; -.
Mendel; 17452; Arath; 2767;17452.
SEQUENCE 177 AA; 17830 MW; 3EF8094
                                                                                                                                                                                                                                                                                                                                                                                                                             Q9LF59;
Q9LF59;
01-OCT-2000
01-OCT-2000
01-MAR-2001
                                  InterPro; PRINTS; P
                                                                       EU Arabidopsis sequencing pusubmitted (AUG-2000) to the EMBL; AL391151; CAC01909.1;
                                                                                                                                                                                                                                                                                  Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Embry Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                            GLYCINE/PROLINE-RICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           proteins rich in glycine and
Arabidopsis thaliana.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                               Submitted (AUG-2000)
                                                                                                                                                                                                    Sato S., Na
Tabata S.,
                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                        K10A8_130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=COLUMBIA; MEDLINE=99397451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=CV. E.COLI LE392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=96189273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN=CV. E.COLI LE392;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Puigdomnech P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Puigdomenech P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Marty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Molecular characterization of the gene coding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GHKHKHGHGHG--KHKNKGK-KNGKH 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GHGYGYGHGHGKFKHGKHGKFKHGKH 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mol.
O; IPR000216; -.
PR00239; RHODOPSNTAIL.
                                                                                                                                                                                              FROM N.A.

Nakamura Y., Kaneko T.,

Newes H.W., Rudd S., I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (JAN-1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Monfort A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biol.
                                                                                                                                                                                                                                                                                                                                                                                                                             (TrEMBLrel.) (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30:625-636(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed=8605310; A., Stiefel V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=10470850;
                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                     (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41.08;
57.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ç
                                                                                                                                                                                                                                                                                                                                                                                                                               15,
16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    the
                                                                                                                                                                               the EMBL/GenBank/DDBJ
                                                                                                                  project;
                                                                                                                                                                                                                                                                                                                         Embryophyta; Trachedons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω,
                                                                                             EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 72.5;
Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               proline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nakamura
               E3510947AA98BC0A CRC64;
                                                                                                                                                                                                    Lemcke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3EF8094DCAD13F92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                             Kato T., Asamizu E., Ko
Lemcke K., Mayer K.F.X.;
/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ludevid D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  thaliana chromosome
1,011,550 bp covered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 interacting with membranes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .
Y.,
                                                                                                                                                                                                                                                                                                                         Tracheophyta; S;
dicots; Rosidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10;
                                                                                             databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Delseny
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    covered
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GPRP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E., Kotani H.,
                                                                                                                                                                                                                                                                                                                            Spermatophyta; e; eurosids II;
                                                                                                                                                                                                                        Kotani
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      þ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              177;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    bу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    class
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ω,.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      seventeen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          , of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2:
```

```
RA Ballew R. M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., RA Beesson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., RA Berson B.Y., Benos P.V., Berman B.P., Brokstein P., Bolshakov S., RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Rothers A., Chandra I., Bolshakov S., Dahlke C., Davengort L.B., Davies P., RA Burtls K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., RA Burtls K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., RA dee Pablos B., Delcher A., Dahlke C., Davengort L.B., Davies P., RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., RA Dodson K.J., Evangelista C.C., Ferriaz C., Ferriaz S., Fleischmann W., RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., Glasser K., RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M., RA Hostin D., Houston K.A., Howland T.J., Hernandez J.R., Houck J., RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X., RA Liu X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D., RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M., RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T., RA Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T., RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E., RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Mang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J., RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O., RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O., RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O., RA Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O., Ra Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu X., Smith H.O., Ra Zheng X., Ra Zheng X., Shill M. Zheng X., Shill M. Zhong X., Shi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-2001 (TIEMBLrel. 13, Created)
01-MAR-2001 (TIEMBLrel. 16, Last sequence update)
01-MAR-2001 (TIEMBLrel. 16, Last annotation update)
FEMALE STERILE (1) HOMOEOTIC PROTEIN.
FS(1)H OR CG2252.
                      Pfam; PF00439;
                                                                                                    FlyBase; FBgn0004656; fs(1)h.
InterPro; IPR000104; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-20196006; PubMed-10731132;
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang O., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayan B., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9W3L3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pterygota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GHKHKHG-----HGHGKHKNKGKKN------GKHNG-----WK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GHHHGHGYGYGYHGHGKFKHGKFKHGKFGKHGMFGKHKGKFFKKWK 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                           IPR001487; - IPR002173; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Neoptera; Endopterygota; Diptera; Brachycera; Musc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 eoptera; Endopterygota; Diptera;
Drosophilidae; Drosophila.
ANTIFREEZEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40.4%;
39.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 71.5;
Pred. No. 0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .018;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     173;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ω
••
```

```
RA Abril J.F., Abdayani A. An H.J., Andrews-Pfannkoch C., Baldwin D.,
RA Abril J.F., Abdayani A. An H.J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gabart W.M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Liu X., Mattel B., McIntosh T.C., McLeod M.P., McDherson D.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Liu X., Mattel B., McIntosh T.C., McLeod M.P., McPherson D.L.,
RA McIntosh D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Menten D.R., Pacleb J.M.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Chier P., Shen H.,
RA Chier S., Saunders R.D.C., Scheeler F., Shen H.,
RA Chier S., Saunders R.D.C., Scheeler F., Shen H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DR DR DR DR DR DR DR DR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Ma
Best Loc
Matches
               Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Spier E., Spradling A.C., Stapleton M., Strong R., Sun Svirskas R., Tector C., Turner R., Venter E., Wang A.H. Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbac Williams S.M., Woodage T., Worley K.C., Wu D., Yang S. Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhac Zheng X.H., Zhong F.N., Zhong W., Zhou X., Zhu S., Zhu Gibbs R.A., Myers E.W., Rubin G.M., Venter J.C.; "The genome sequence of Drosophila melanogaster.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9W4C1
Q9W4C1;
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE;
PROSITE;
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=20190000, Function MEDLINE=20190000, Function MEDLINE=20190000, Function MEDLINE=20190000, Function MEDLINE=201900000, Charles S. Holt R.A., Evans C.A., Galle R.F., Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F., Amanatides P.G., Scherer S.E., Richards S., Ashburner M., Henderson S.N., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Chen L.X., P., Vandell M.D., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhang Q., Zhan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CG15784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR00503; BROMODOMAIN. PRINTS; PR00334; KININGEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ephydroidea; Drosophilidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pterygota; Neoptera;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GHKHKHGHGHGKHKNKGKKNGKHNGW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            СНСНСНСНСНСНСНСНСНСНСНСНС
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12; · Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS00633; BROWODOMAIN_1; 2.
PS50014; BROWODOMAIN_2; 2.
PS00583; PFKB_KINASES_1; UNKNOWN_1.
PS07 AA; 195339 MW; 1D80AA7BB351F06B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  melanogaster (Fruit fly)
Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13,
14,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ψ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 71; DB
Pred. No. 0.23
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 5;
0.23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                  Weissenbach J.,
                                                                                                                                                                                                     Wang A.H.,
                                                                                                         Yang S.,
G., Zhao
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1937;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                 Sun E.,
                                                                                                                                        s.,
                                                                                                                                                                                                                                                                 Smith T.,
                                                                                  X., Smith H.O.
                                                                                                                                            Yao Q.A.,
                                                                                                                                                                                                  Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Baldwin D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             K.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
```

```
Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SO DR
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FlyBase; FBgn0029766; CG1578
InterPro; IPR002395; - CH1578
PRINTS; PR00334; KININGEN.
SEQUENCE 554 AA.
                                                                                                                                                            O22671;
01-JAN-1998 (TrEMBLrel.
01-JAN-1998 (TrEMBLrel.
01-NOV-1998 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                        SIGNAL
SEQUENCE
 and histidine-rich pactinorhizal nodule Mol. Plant Microbe I
           MEDLINE=97348585; PubMed=9204569;
Pawlowski K., Twigg P., Dobritsa S., Guan C., Mulli
"A nodule-specific gene family from Alnus glutinosa
and histidine-rich proteins expressed in the early
actinorhizal nodule development.";
                                                                                   Alnus glutinosa (Alder).
Eukaryota; Viridiplantae; Embr;
Magnoliophyta; eudicotyledons;
Fagales; Betulaceae; Alnus.
NCBI_TaxID=3517;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Quercus robur (English oak).
Eukaryota; Viridiplantae; Embr.
Magnoliophyta; eudicotyledons;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-2000 (TrEMBLrel. 15, Last sequence update) 01-OCT-2000 (TrEMBLrel. 15, Last annotation updat PHASE-CHANGE RELATED PROTEIN PRECURSOR.
                                                                                                                                                                                                        022671
                                                                                                                                                                                                                                                                                                                                                                                       EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9M435
                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
TISSUE=IN VITRO SHOOT CULTURES;
Gil B., Pastoriza E.M., Ballester
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9M435;
                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                      "Identification of a phase-change related mRNA derived from basal sprouts and crown branches." Submitted (NOV-1999) to the EMBL/GenBank/DDBJ dEMBL; AJZ71778; CAB72442.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=38942;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     198
                                                                                                                                                                                                                                                            49
                                                                                                                                                                                                                             11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
                                                                                                                                                                                                                                                                                1 GHKHKHGHGKHKNKG 17
                                                                                                                                                                                                                                                            GHGHGHGHGHHGKPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     НGHKHGHGPHHHGRHGHHGRPHHHH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HKHKHGHG----HGKHKNKGKKNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AE003434; AAF46035.1; -.
se; FBgn0029766; CG15784.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                     Similarity 64.
                                                                                                                                                                                                                                                                                                                                                         79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 15, (TrEMBLrel. 15, (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                        1
AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Quercus.
                                                                                                                                                                                                                                                                                                                                                        29
8414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62329 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       39.8%;
                                                                                                                                                                                                                                                                                                                39
64
                                                                                                                                                                                                                                                            65
                                                                                                                                                                                                                                                                                                              . 7%;
                                                                                                                                                                                                                                                                                                                                                         MW;
                                                                                                                                                             05,
05,
20
                                                                                                         Embryophyta; Trachedons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Embryophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 70.5; D
Pred. No. 0.07
4; Mismatches
                                                                                                                                                                                                                                                                                                    Score 70; DB
Pred. No. 0.01
0; Mismatches
                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4.
  10:656-664(1997).
                                                                                                                                                                                                                                                                                                                                                        POTENTIAL.
8E45CABF40F00B6F
                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              core
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9CE2F80A7A1D902D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              eudicots;
                               Guan C., Mullin
Alnus glutinosa e
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sanchez
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79
                                                                                                                                                                                                         98
                                                                                                         Tracheophyta; Spermatophyta; dicots; Rosidae; eurosids I;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tracheophyta; S
dicots; Rosidae;
                                                                                                                                                                                                                                                                                                               DB 10
0.014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 5
                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A
                                                                                                                                                                                                                                                                                                                          10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                c:;
                                                                                                                                                                                                                                                                                                                                                        CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                 databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6;
                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                     in oak shoot cultures
                                                                                                                                                                                                                                                                                                                        Length 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 554;
                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                      stages
                                n B.C.;
encodes glycine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Spermatophyta;
                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                    0;
```

```
RESULT
Q9M0L8
      ID ACCOMENTATION OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT OF THE REPORT
                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                         δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δÃ
                                                                                                                                                                                                                                                                                                                                 Q9SM38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FT FT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9MOLB
Q9MOLB;
Q9MOLB;
Q1-OCT-2000 (TrEMBLrel. 15, Cr
r 01-OCT-2000 (TrEMBLrel. 16, L;
T 01-MAR-2001 (TrEMBLrel. 16, L;
T 01-MAR 2001 (TrEMBLrel. 16, L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local s
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Signal.
SIGNAL
CHAIN
                                                                                                                                                                                                                         O9SM38, PRELIMINARY; PRT; 197 AA.
09SM38, 01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Benes V.,
Mayer K.F.
                                                                                                                     PUTATIVE GLYCINE AND PROLINE-RICH PROTEIN. Sporobolus stapfianus (Ressurection grass) Eukaryota; Viridiplantae; Embryophyta; Tra Magnollophyta; Liliopsida; Poales; Poaceae Eragrostideae; Sporobolus.
  Neale A.D., Blc
Evans J., Gaff
"The isolation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EU Arabidopsis sequencing p
Submitted (MAR-2000) to the
EMBL; AL161550; CAB78922.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Trache
Magnoliophyta; eudicotyledons; core eudicots;
Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hypothetical
SEQUENCE 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000216; -. PRINTS; PR00239; RHODOPSNTAIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; Y08436; CAA69708.1;
                                                             SEQUENCE FROM N.A.
                                                                                                    NCBI_TaxID=56623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                    131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               12
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GHKHKHGHGHGKHKNKGK-KNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GHKHKHGHGHGK-HKNKGKKNGKH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GHRHVHGHGHGNGHGHHGHGHSGH
                                                                                                                                                                                                                                                                                                                                                                                                                    GHAPAHGFGHGGH - - - GKFKHGKHGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       l Similarity
12; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Rechmann X.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (MAR-2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     179 AA; 17745 MW;
Blomstedt C.K., Bronson aff D.F., Hamill J.D.; ion of lowly-transcribed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30
30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               s
'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29
86
9188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              39
50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Borkova D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       project;
he EMBL/GenBank/DDBJ
                   Bronson
J.D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ļ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 69.5; D
Pred. No. 0.01
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score
Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL.
POTENTIAL.
D85B7EF888C8899A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1DAC3F3D3C1A604D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                    153
                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ansorge W.,
                                      ₽.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        179
                                                                                                                                          Tracheophyta; Spermatophyta;
ceae; PACC clade; Chloridoideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tracheophyta; Spermatophyta;
dicots; Rosidae; eurosids II;
                                      Le T.N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .042;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BB
  which are induced during
                                                                                                                                                                                                                             update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mewes H.W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 179;
                                          Guthridge
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lemcke
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ۳.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .
:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

genes

```
RESULT
Q9VU00
ID Q9
AC Q9
DT 01
DT 01
                                                                                                                                                                                                                                    밁
                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Вp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SO DR PR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
 Q9VU00;
Q9VU00;
01-MAY-2000
01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996
01-NOV-1996
                                                                                                                                                                                                                     Waterston R.;
Submitted (DEC-1995) to the EMBL/GenBank/DDBJ databases
EMBL; U41991; AAA83352.1; -.
SEQUENCE 251 AA; 28552 MW; B066535FC510F419 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                      Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A.
Craxton M., Dear S., Du Z.,
Gardner A., Green P., Hawkins T., Hillier L., Jier M., Johnston L.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Jones M., Kershaw J., Kirsten J., Laister N., Latreille P.,
Lightning J., Lloyd C., Mcmurray A., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Ropora A., Saunders D., Shownkeen F.
Smaldon N., Smith A., Sonnhammer E., Staden R., Sulston J.,
Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K., Waterston R.,
Watson A., Weinstock L., Wilkinson-Sproat J., Wohldman P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       dessication of the resurrection grass Sporobolus stapfianus."; submitted (MAY-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AJ242804; CA861840.1; -. InterPro; IPR000216; -. InterPro; IPR000216; -. PRINTS; PR00239; RHODOPSNTAIL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE=94150718; PubMed=7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                Submitted
                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                   Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY TO THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q18577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q18577
                                                                                                              166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                 cson A., w
                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
nes 16; Conserv
                                                                                                                                     1 GHKHKHGHGKGKKNKGKKNGKHNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GH-KHKHGHG---HGKHKNKGKKNGKHNGWK 27
                                                                                                             GPRHGHGHGHRFHHGRRFGRNIG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GHGKFKHGHGKFKHGKHGHGMFGGGKFKKWK 197
                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                (DEC-1995)
                                                                                                                                                                                                                                                                                                                                                                                              contiguous nucleotide sequence from chromosome III of C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (TrembLrel. 01, Create
(TrembLrel. 01, Last s
(TrembLrel. 08, Last a
  (TrEMBLrel.
                                                                                                                                                                  Conservative
                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA,
                                                                                                                                                                              39.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               19769 MW;
                                                                                                                                                                                                                                                                                                                Ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        39.0%;
 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01, Created)
01, Last sequence update)
08, Last annotation update)
                                                                                                                                                                                                                                                                                                                the EMBL/GenBank/DDBJ databases.
Created)
Last sequence update)
                                                                                                                                                                 9
                                                                                                                                                                              Score 69;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 69; DB 10;
Pred. No. 0.046;
1; Mismatches 10
                                          PRT;
                                                                                                                                     25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4EED3097526A825A CRC64
                                                                                                                                                                Mismatches
                                          693 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251
                                                                                                                                                                            0.
                                                                                                                                                                                            DB 5;
                                                                                                                                                                               .058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10;
                                                                                                                                                                 8
                                                                                                                                                                                          Length 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 197
                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rhabditoidea;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coulson A.
                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  R.
                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N
```

밁

649

GHGHSHGHGHGHGHGHGHGHGHGHG

673

```
Q
                                                                                                                                           RA Adams N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams N.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Galle R.F.,
RA Adams M.D., Celniker S.E., Richards S., Ashburner M., Henderson S.N.,
RA Burtin G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Bardon R.C., Rogers Y.H.C., Blazel G., Nelson C.R., Millos G.L.G.,
RA Barlin J.F., Agbayani A., An H.-J., Andrews Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Besson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Besson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Burtis K.C., Busam D.A., Buller H., Cadleu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Huston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Melson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Rainert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Mang S.-Y., Wassarman D.A., Wentstock G.M., Weissenbach J.,
RA Syirskas R., Trector C., Turner R., Venter E., Wang A.H., Wang X.,
Ra Sheng X.H., Wang S. M., Wood S., Jang G., Zhou X., Smith H.O.,
Ra Shens R.H., Shen R., Sh
                                       Query Match
Best Local S
Matches 12
                                                                                                                                                                                                                                                            -I- SIMILARITY: TO OTHER HOMEOBOX EMBL; AE003501; AAF49895.1; -Flybase; Fegno015919; caup. InterPro; IPR001356; -
                                                                                                                                                                                                   PROSITE; PS00027; HOMEOBOX_1; PS50071; HOMEOBOX_2;
                                                                                                                                                                                                                                           InterPro; IPRO
Pfam; PF00046;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Eukaryota; Neoptera; Endopterygota; Diptera; Brachycera; MuscEphydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                 SMART; SM00389; HOX; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAUP PROTEIN.
CAUP OR CG10605.
                                                                                                                                                                                                                                                                                                                                           -!- SUBCELLULAR LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=20196006; PubMed=10731132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2001 (TrEMBLrel. 16,
                                         Local Similarity
nes 12; Conser
GHKHKHGHGHGKHKNKGKKNGKHNG
                                                                                                                                           693 AA;
                                                                                                                                         Homeobox; Nuclear protein.
93 AA; 73667 MW; FBEB1616493F7EC9 CRC64;
                                                        39.0%;
                                                                                                                                                                                                                                                                                                                                         NUCLEAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Last annotation update)
                                                          Score
Pred.
25
                                         Mismatches
                                                                                                                                                                                                                                                                                                                        (BY SIMILARITY).
DOMAINS.
                                                          No.
                                                          DB 5;
0.16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brachycera; Muscomorpha;
                                                                           Length 693;
                                       0
                                       Gaps
                                       0
```

Search completed: July 6, 2001, 09:25:55 Job time: 991 sec

THIS PAGE BLANK (USPTO)